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Description of the Regulatory Process for the Chicago, Illinois Case Study
Final Task I Report

Pacific Environmental Services, Inc.
Elmhurst, IL

Prepared for

Council on Environmental Quality
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CEQ and EPA sponsored five studies examining the response of sources to the regulatory approach to controlling air pollution, with emphasis on the post-compliance emissions history. The study areas are: North Carolina (3 vols), Houston (3 vols), San Diego (3 vols), Chicago (3 vols), and New Jersey (2 vols).

This report begins with an overview of the history and organization of the Illinois Environmental Protection Agency and the Chicago Department of Environmental Control, describes in detail their regulatory programs, including funding, and summarizes several case studies which illustrate phases of the regulatory process.

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FINAL TASK I REPORT

DESCRIPTION OF THE REGULATORY PROCESS FOR THE CHICAGO, ILLINOIS CASE STUDY

January 1979

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EXECUTIVE SUMMARY

The study encompasses a description of the regulatory process for the City of Chicago, Illinois Case Study. Pacific Environmental Services, Inc. (PES) staff members met with technical/administrative personnel of the Illinois Environmental Protection Agency (IEPA) offices in Springfield and Maywood, Illinois, as well as the City of Chicago Department of Environmental Control (CDEC), and the U.S. Environmental Protection Agency (EPA) Region V office. In addition, PES staff have reviewed the files of these agencies which concern various levels of activity with respect to initial and/or continued industrial facility compliance (e.g., budgets, grant applications; inspection, permit processing, litigation records, organization and staffing schedules, agency program plans, and industrial records and files). Through these interviews and record examinations, PES has prepared this report discussing the background and development of control; the growth and organization of the IEPA/CDEC programs within the City of Chicago; the allocation of funds by category of expenditure and source of funds; the regulatory processes; the general nature of the facilities regulated; and the mechanisms, policies and procedures for the application of sanctions.

The IEPA was established in 1970 through the Illinois Environmental Protection Act. The agency operated under the State of Illinois Air Pollution Control Regulations, which were included within the State Implementation Plan (SIP) in 1971. The CDEC was established in 1969 through Chapter 17 of the Municipal Code of Chicago, Environmental Control Ordinance. The agency operated under the air pollution control rules contained in Article II of the code. The City regulations were incorporated into the SIP. Since 1972, the State/City Regulations have been modified to reflect changing environmental priorities. The CDEC role within the SIP has been refined in the form of an annual interagency agreement with IEPA.

The IEPA is organized around semi-functional lines, with environmental media program divisions involved in planning, administration, permitting, surveillance, and monitoring distinct and separated from agency enforcement programs and internal administration offices. The agency operates three regional offices (Maywood, Peoria, and Collinsville), with the Maywood office responsible for 19 counties in Northeastern Illinois (including the City of Chicago). The agency currently employs a staff of approximately 155 people in various aspects of air pollution control.

The CDEC is organized around functional lines, with all internal groups spanning most pollutant medias (i.e., air, water, noise, solid waste, etc.) along categorical program areas. The agency includes the following program groups: Engineering, Technical Services, Enforcement, Inspectional Services, and Mobile Services. The CDEC staff has grown steadily since its creation, to its present overall staff size of approximately 200 people. The agency maintains an extensive mobile inspector fleet employing over 20 autos, and has (in the past) utilized aerial surveillance.

The IEPA budget for air programs has grown substanitally since 1974, from approximately $2.5 million to $4.3 million in 1978 - 1979. Similarly the overall staff level has increased from approximately 115 individuals to over 140 during the same time period. A major portion of the budget is utilized for personnel. The budget for the CDEC has also grown since 1972. During the past six years, the CDEC air pollution budget has expanded from approximately $2.5 million to $4 million. Personnel levels have grown from 150 to approximately 275 people during the same period.

The IEPA permit program involves both a construction permit, as well as a five year renewable operating permit. The agency conducts an extensive New Source Review Program which involves both engineering and dispersion modeling analyses. Enforcement activities of the IEPA include general area surveillance through the regional offices,

complaint investigations, Pollution Control Board actions, and legal case preparation in construction with the State Attorney General's office. Although the enforcement-related resources have varied through the years as a function of yearly agency commitments and/or program priorities (such as SIP developmental efforts), the agency has maintained a substantial commitment towards enforcement. As a percentage of overall agency resources the resources devoted to compliance activities have grown from approximately 30 to nearly 70 percent. Most recently, an increasing level of agency resources have been devoted to SIP development under the Clean Air Act Amendments. Since 1972 overall agency resources devoted to "prevention" (i.e., support engineering functions) has decreased from approximately 50 to 25 percent of overall agency resources.

The CDEC permit system includes an Installation Permit in conjunction with an annual Certificate of Operation (which is coupled with a facility visit). The agency has also coupled its permit system into a "sign-off" capacity on all City Building Permits. An Engineering Review is conducted on all permits, with dispersion modeling used only in special circumstances. Enforcement functions at CDEC include complaints handling, abatement patrols (mobile inspectors), and court case preparation. The CDEC permits, field surveys, source sampling, and emission inventories. In recent years, over 40 percent of the CDEC resources have been devoted to enforcement/permits/inspections/ monitoring activities.

The permit activity levels of both the IEPA and CDEC are controllable only to the extent of scheduling of operating permit/annual certification renewals. In addition, the level of processing/engineering review is somewhat controllable with respect to when extensive dispersion modeling is required in support of a permit application. A recent audit of the IEPA New Source Review Program by the EPA regional office indicated that, while the permit program is rather extensive, some further documentation of internal procedures

would be beneficial to the agency. The CDEC role in actual enforcement efforts is governed somewhat by its role in the SIP, in accordance with its interagency agreement with the IEPA.

The IEPA coordinates its case preparation load through staff attorneys assigned to the agency from the Office of the State Attorney General. All prosecutions are handled either by the Office of the Attorney General or the County State's Attorney for the appropriate county involved in the legal proceeding. The CDEC acts through the authority of the Commissioner who can prosecute actions in the name of the City of Chicago.

Both agencies utilize extensive permitting and enforcement functions - the IEPA through its regional office structure; the CDEC through its fleet of mobile inspectors. The IEPA enforcement policies in recent years have tended to favor an approach centered around litigation; while the CDEC approach has tended to concentrate on agency-industry negotiations.

1.0 INTRODUCTION

1.1 PROJECT OBJECTIVES

In July 1978, the Council on Environmental Quality in Association with the U.S. Environmental Protection Agency (EPA) contracted with Pacific Environmental Services, Inc. (PES), to study the "Effectiveness and Costs of Selected State and Local Regulations for the Reduction of Emissions to the Atmosphere From Stationary Sources." Under this contract, PES is to perform two case studies which will involve the City of Chicago, Illinois, and San Diego, California.

The purpose of the study is essentially:

- To determine empirically the nature and extent of the response by stationary sources of air pollutants to existing state/local air pollution control agency regulations;
- To explain the reasons for the actual source responses;
- To determine the relationship of various regulatory actions to pollutant emission reduction over time; and
- To examine the overall program costs and associated benefits (in terms of actual pollutant emission reductions) resulting from various regulatory actions by the control agencies.

During the course of the study, particular emphasis is being placed on the degree to which pollutant emission reductions are achieved and maintained over time as well as the associated cost-effectiveness of the regulatory efforts. The desired result of this study is to examine (as systematically as practicable) and determine the actual achievements, in terms of overall program effectiveness and associated costs of the State and local government in bringing about the attainment and maintenance of the required pollutant emission reductions by stationary sources through direct regulation.

Each case study has three main phases:

- o An analysis of the regulatory process by focusing upon the rules, regulations, procedures, practices and costs associated with the respective State and/or local control agencies;
- o The performance of various individual stationary sources of air pollution in responding to direct regulation over time; and
- o Various recommendations for improving and/or replacing the existing regulatory process. The report contained herein represents the data and results obtained by PES for the Chicago, Illinois, case study regarding Phase 1 of the study.

1.2 ORGANIZATION OF TASK 1 REPORT

The description of Chicago, Illinois regulatory process begins with an overview of the history and organization of the two regulatory agencies involved, i.e., the State of Illinois Environmental Protection Agency (IEPA) and the City of Chicago Department of Environmental Control (CDEC). The discussion focuses upon the initial establishment of each agency, a description of their development from January 1970 until January 1978, and an introduction to the various agency programs underway aimed at attaining and maintaining stationary source compliance.

The next section of the report outlines and describes in detail the various agency regulatory programs. A separate discussion is presented for each agency with the presentation divided into their net regulatory phases. Within each discussion the various regulatory programs are considered in terms of a description of agency procedures and practices, and overview of the program costs and/or sources of funding, and a report as to instances where each particular program was tested in a situation involving a specific stationary source. Section 4 of this report contains summaries of several case studies which illustrate phases of the Illinois EPA and Chicago Department of Envi- ronmental Control regulatory process. The basic report concludes with a brief discussion of conclusions reached by PES based upon the data

gathered in Task 1 of the project. The conclusions center upon our initial impressions of the interrelated agency regulatory programs, and specific areas for further scrutiny as the study progresses into Task 2.

1.3 DATA GATHERING METHODOLOGY

To facilitate data gathering during Task 1 with the minimum expenditure of time and effort on the part of regulatory agency staff, PES focused its efforts on contacting key agency staff for the purposes of identifying and/or locating various agency procedures, practices, files, organizational charts, etc. Following the initial staff contacts, PES concentrated on gathering necessary background information directly from State/local agency files/records.

The initial project kickoff meeting was held at the IEPA Maywood District office on June 25, 1978. At this meeting, the purpose and scope of the project were discussed between the CEQ and EPA Project Officers, the PES case study team, and Messrs. LeVine, Zenisek, Krzymowski, Rosentnal, Franson, and Malani of IEPA. PES staff indicated that the study would be performed with a minimum of disruption of IEPA staff. On June 26, 1978 a similar meeting was held with Messrs. Kason and Masterson of CDEC. The IEPA and CDEC staff were extremely helpful in providing input data for the study not only at the initial kickoff meetings, but in subsequent followup discussions as well.

On August 4, 1978 a second meeting was held at CDEC, at which time data regarding CDEC background funding and regulatory programs were gathered by PES. In addition, the potential stationary source list of facilities for further study was refined by reviewing CDEC inspection/enforcement files. On August 8, 1978 a similar followup discussion was held with Mr. Zenisek of the IEPA Maywood office, to gather additional information on State agency permitting and enforcement procedures, as well as a more detailed review of the IEPA facility files.

At this meeting PES staff found the IEPA files to be rich in background facility information regarding the agency's extensive enforcement program. However, since the District office files focused primarily on District office activities, the PES staff found that, in order to gather additional background data regarding the overall IEPA regulatory policy, funding, and procedures, a separate trip to the IEPA headquarters office in Springfield, Illinois, would also have to be made. This trip occurred on August 14, 1978 at which time a meeting was held with the acting IEPA Air Quality Division Manager, Mr. Schmierbach, to ascertain IEPA permit and enforcement practices. Again, the IEPA staff were most helpful, and IEPA headquarters files were also examined to assess potential case studies which would typify various agency mechanisms aimed at assuring compliance.

On August 18, 1978 a final discussion was held at CDEC offices with Mr. William Thorpe, Engineer, to review and gather further information regarding specific city enforcement and surveillance cases, and to finalize the stationary source facility list. PES discovered that the CDEC engineers, notably Mr. Thorpe, possessed a wealth of knowledge regarding past facility interactions, enforcement cases, and other facility stack tests, etc.

Having discussed and gathered regulatory information from the State and local agencies with primary enforcement/surveillance responsibilities within the City of Chicago, PES then turned to the EPA, Region V offices to gather information from the Federal perspective. Therefore, the EPA Region V office was also visited in order to summarize Federal/State/local air agency function practices during the past eight years. PES found that, while aggregate funding data were available for most years since 1970 through the EPA grant files, data specific to individual program element funding (i.e., enforcement programs, source testing, etc.) was limited except for the two most recent fiscal years. In order to determine program element

funding for earlier years, PES staff reviewed each IEPA/CDEC grant application to summarize funding levels by adding up individual salaries and/or equipment expenses which were identifiable as enforcement related resources.

Overall, both the IEPA and CDEC were extremely helpful in providing input data for the first stage of this study. Specifics on most aspects of the regulatory policy and/or practices were limited in only a few instances. In general, we believe that a substantial overview of the regulatory programs was provided by the two State/local control agencies as well as the EPA. The data gathered to date by PES are presented in the following sections.

2.0 AGENCY HISTORY AND ORGANIZATION

2.1 INTRODUCTION

In this section, the background, history and organizational overview of the IEPA and CDEC are presented. Each agency is discussed separately in terms of its respective enabling legislation regulations, state implementation plan role, overall budget and manpower, and existing agency programs aimed at bringing about stationary source compliance. Following the description of each agency, the detailed discussion of the various agency regulatory programs is contained in Section 3.0 (Agency Programs).

2.2 ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

2.2.1 ENABLING LEGISLATION

On June 1, 1970 the Illinois General Assembly enacted the "Environmental Protection Act." This legislation stated that "Environmental damage seriously endangers public health and welfare...; because environmental damage does not respect political boundaries...; air, water and other resource pollution, public water supply, solid waste disposal, noise and other environmental problems are closely inter-related ...' and it is the obligation of the State Government to manage its own activities so as to minimize environmental damage..." The purpose of the Act was to establish a unified, statewide program supplemented by private remedies, and to assure that adverse effects on the environment are fully considered and borne by those who cause them.

The Act established three distinct bodies within the Illinois State Government with interrelated responsibilities for protecting the environment. Within the Executive Branch of the State Government there was created the Illinois Environmental Protection Agency (IEPA), and the Illinois Institute for Environmental Quality (IIEQ). Also

created was an independent Pollution Control Board (PCB), consisting of five technical members to be appointed by the Governor with the advice and consent of the Senate. The relationship and responsibilities of the three entities are depicted in Figure 2-1.

Under the Act, the IEPA serves as the planning, implementing, and enforcement agency. The IIEQ serves as a research and technological investigatory group. The IPCB serves as the rulemaking and public hearing body. With regard to program responsibilities in bringing air pollution sources into compliance, the IEPA may:

- o Collect and disseminate information and/or technical data including the determination of the quantity and nature of pollutant emissions;
- o Conduct a program of continuing surveillance and regular/periodic inspection;
- o Enter at all reasonable times upon any public or private property to investigate for possible violations of the Act;
- o Prepare and present enforcement cases to the IPCB; appear before the PCB regarding a petition for variance, a permit denial, or any other rulemaking effort;
- o Administer a state permit system;
- o Require the submission of necessary information in support of permit requests;
- o Prescribe permit fees;
- o Make recommendations to the PCB on regulation changes;
- o Represent the State in any negotiation for interstate compacts; and
- o Accept and administer funds made available to the State in order to carry out the Act.

In conjunction with (but independent from) the IEPA, the IPCB has rulemaking authority to implement the Act. More specifically, the PCB may: define and implement the environmental control standards applicable to Illinois, and may adopt rules and regulations through the

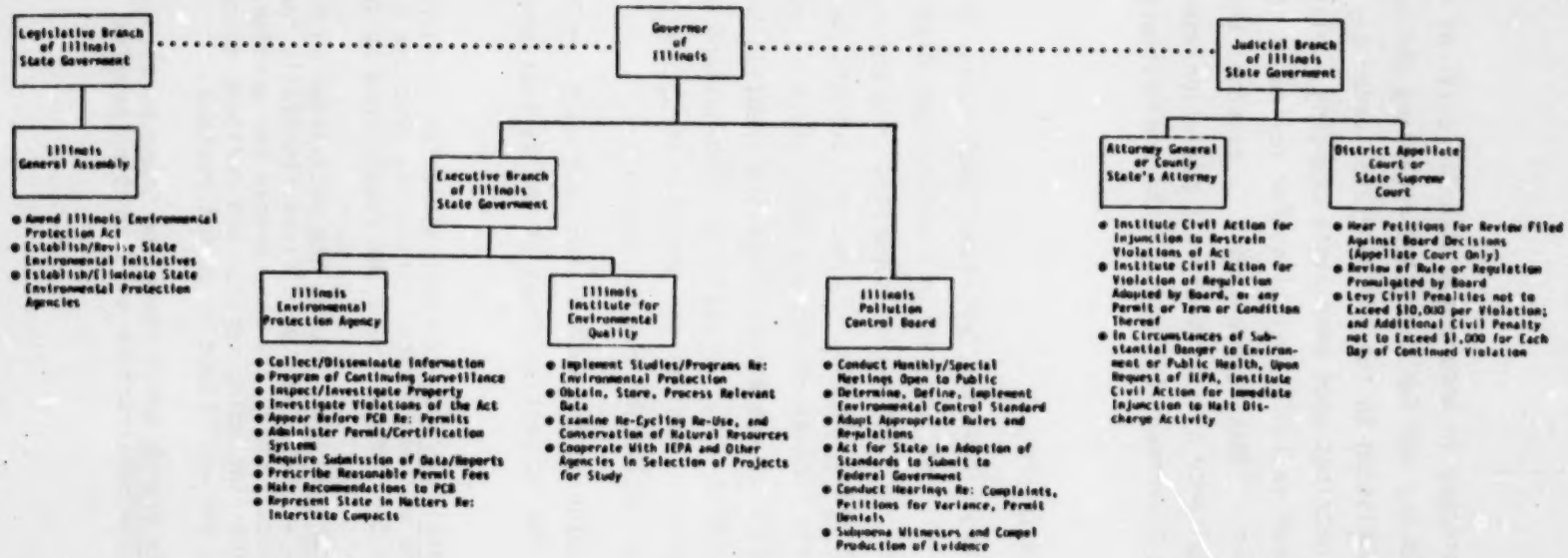
Legislative Branch of Illinois State Government
Governor of Illinois
Judicial Branch of Illinois State Government
Illinois General Assembly
• Amend Illinois Environmental Protection Act
• Establish/Revise State Environmental Initiatives
• Establish/Eliminate State Environmental Protection Agencies
Executive Branch of Illinois State Government
Attorney General or County State's Attorney
• Institute Civil Action for Injunction to Restrain Violations of Act
• Institute Civil Action for Violation of Regulation Adopted by Board, or any Permit or Term or Condition Thereof
• In Circumstances of Substantial Danger to Environment or Public Health, Upon Request of IEPA, Institute Civil Action for Immediate Injunction to Halt Discharge Activity
District Appellate Court or State Supreme Court
• Hear Petitions for Review Filed Against Board Decisions (Appellate Court Only)
• Review of Rule or Regulation Promulgated by Board
• Levy Civil Penalties not to Exceed $10,000 per Violation; and Additional Civil Penalty not to Exceed $1,000 for Each Day of Continued Violation
Illinois Environmental Protection Agency
• Collect/Disseminate Information
• Program of Continuing Surveillance
• Inspect/Investigate Property
• Investigate Violations of the Act
• Appear Before PCB Re: Permits
• Administer Permit/Certification Systems
• Require Submission of Data/Reports
• Prescribe Reasonable Permit Fees
• Make Recommendations to PCB
• Represent State in Matters Re: Interstate Compacts
Illinois Institute for Environmental Quality
• Implement Studies/Programs Re: Environmental Protection
• Obtain, Store, Process Relevant Data
• Examine Re-Cycling Re-Use, and Conservation of Natural Resources
• Cooperate With IEPA and Other Agencies in Selection of Projects for Study
Illinois Pollution Control Board
• Conduct Monthly/Special Meetings Open to Public
• Determine, Define, Implement Environmental Control Standard
• Adopt Appropriate Rules and Regulations
• Act for State in Adoption of Standards to Submit to Federal Government
• Conduct Hearings Re: Complaints, Petitions for Variance, Permit Denials
• Subpoena Witnesses and Compel Production of Evidence

Figure 2-1. Structure and Responsibilities of Illinois State Government With Regard to Environmental Protection

public hearing process in accordance with Title VII of the Act. In addition, the PCB may act for the State regarding the adoption of standards for submission to the United States under any Federal law, and may conduct hearings upon complaints charging violations of the Act, petitions upon variance, petitions for review of IEPA permit denials, and other rulemaking hearings. In essence, the mechanisms for assuring compliance by stationary air pollution sources are shared within the State Government by two separate and distinct governmental units.

2.2.2 IEPA ORGANIZATION

The IEPA is organized upon semi-functional lines, with environmental program divisions involved in planning, administration, permitting, surveillance, and monitoring separated from enforcement programs and IEPA administrative offices. Figure 2-2 depicts the organizational structure of the IEPA as of January 1978, which is essentially the same basic structure of the agency since its creation in 1970 (excluding refinement such as branch creation or combinations within program divisions). Figure 2-3 depicts the specific structure of the agency with respect to air pollution control activities.

In terms of assuring the initial and continued compliance by stationary sources, the respective roles of the various program divisions are as follows:

- The Air Quality Branch is responsible for developing and testing the various control strategies that are ultimately adopted in the form of rules and regulations by the PCB.
- The Compliance Branch focuses its activities on field operations through regional offices (initially four, now three offices), which are responsible for stationary source surveillance (including regular and periodic inspection), monitoring and assistance in permit reviews.
- The Permits Branch administers the State permit system which includes both construction and operating permits.

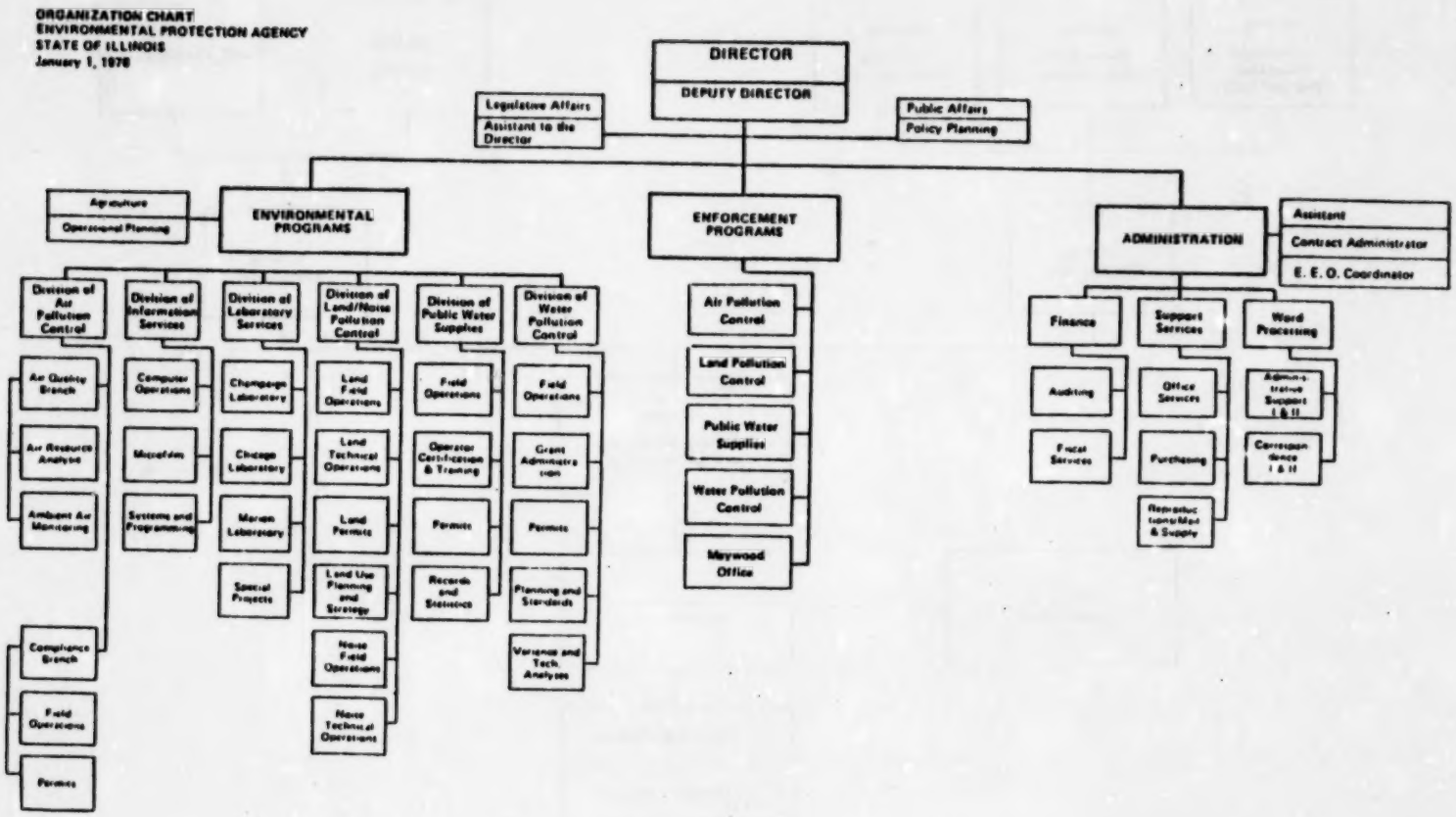

Figure 2-2. Organization Chart, Environmental Protection Agency
State of Illinois

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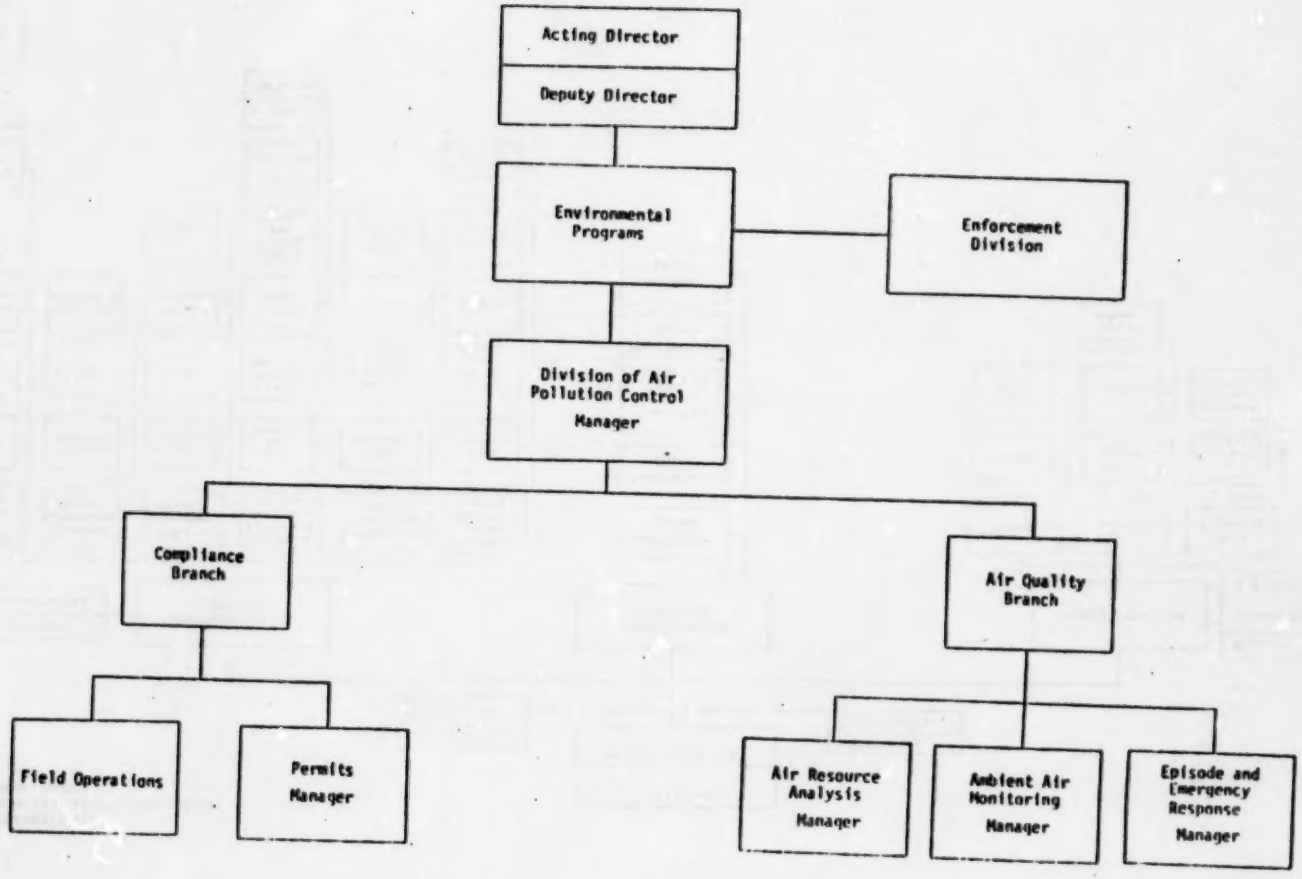

Figure 2-3. Illinois EPA Air Pollution Control Organization

- The separate Enforcement Division maintains the necessary legal staff for case preparation and proceedings before the PCB.

The staffing and associated responsiblities of each regional office have varied since 1970 as a function of State Implementation Plan (SIP) program priorities and available funding. In general, the regional offices serve as the "arm" of IEPA in the field, focusing primarily upon industrial contact and communications. In addition, the regional offices participate to varying degrees in the State permit system process by performing engineering reviews, stack testing, and SIP development. The most recent jurisdictional boundaries for the regional office, located west of downtown Chicago, is responsible for the 19 counties in northeastern Illinois (expanded from an original nine counties), including Cook County and the City of Chicago.

2.2.3 STATE IMPLEMENTATION PLAN ROLES AND PROGRAM RESOURCES

Under the Clean Air Act, the IEPA (as the State implementing arm) is charged with carrying out the State Implementation Plan following the adoption by the PCB and submission to the EPA. As such, the IEPA maintains a lead role in all elements of the SIP including monitoring, planning, surveillance, permits, and enforcement. Where established local air pollution control agencies exist, local roles within the SIP are assessed and updated annually in the form of interagency agreements. Once accepted by each agency the agreement is incorporated into the local air agency Federal pollution control grant, as the basis of funding for the ensuing fiscal year. (In the case of the City of Chicago, their program and interagency agreement with the IEPA are discussed later in this report.)

Since its creation in 1970, Division of Air Pollution Control has grown steadily to its present strength of 161 employees.[1] Program shifts within the agency have occurred over the years, as a function of changing national and/or State program priorities. The overall resource estimate for the Division of Air Pollution Control is

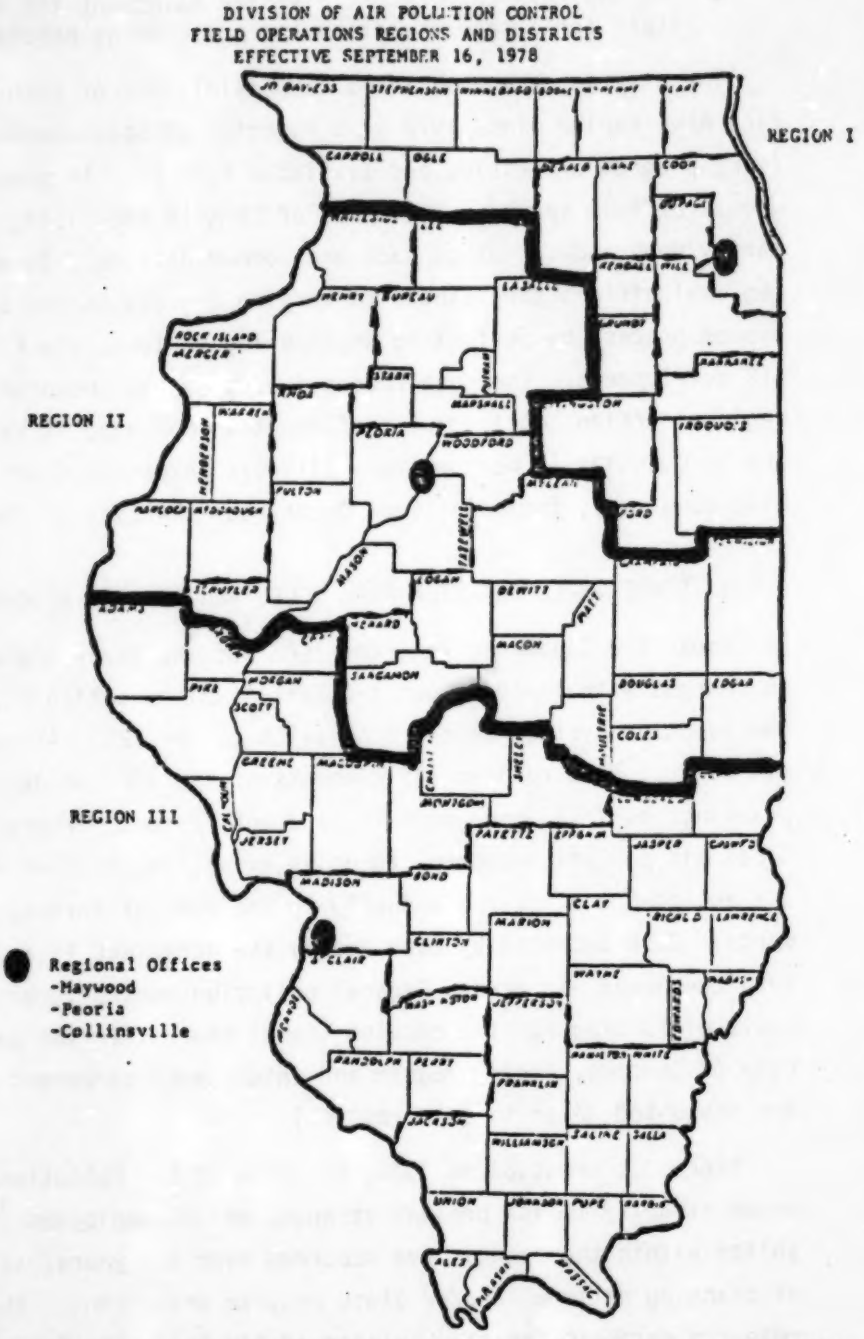

Figure 2-4. Jurisdictional Boundaries for the Regional Offices State of Illinois

illustrated in Figure 2-5. The resource/manpower estimates provided in the figure are based upon statewide IEPA projections for fiscal years 1974 to 1979. Data for years prior to fiscal year 1974 and data specific to IEPA resource expenditures within the City of Chicago georgraphic limits are being prepared and will be supplied by the completion of Task II of the study. Based upon the fiscal year 1978 manpower allocation for the Division of Air Pollution Control, Table 2-1 illustrates the relative priority and resources devoted to IEPA enforcement/permit/compliance-related activities.

Within Table 2-1, the term "compliance" implies those IEPA activities related to inspections and analytical functions (including surveillance, stack testing, ambient monitoring, as well as SIP planning and standard setting, etc.). The term "prevention" relates primarily to the permit program (including support engineering and enforcement functions); and variance procedures. The term "assistance" relates primarily to other agency support functions (including public involvement, interagency coordination, complaint handling, etc.). The "emergency response" term relates to those IEPA functions involved during air pollution episodes. The SIP developmental efforts are included under "administration," with small portions included under "assistance," and "prevention."

As indicated in Table 2-1, the IEPA resource levels devoted to "compliance" have grown rather steadily since fiscal year 1974, while resources devoted to "prevention" have declined. The various program elements are plotted against each other in terms of "percent of total IEPA resources" in Figure 2-6. As illustrated rather dramatically in the figure, the IEPA made a significant shift in emphasis from "prevention" to "compliance" in fiscal year 1976. This shift is consistent with the national program emphasis towards compliance by recalcitrant facilities following the original attainment target date

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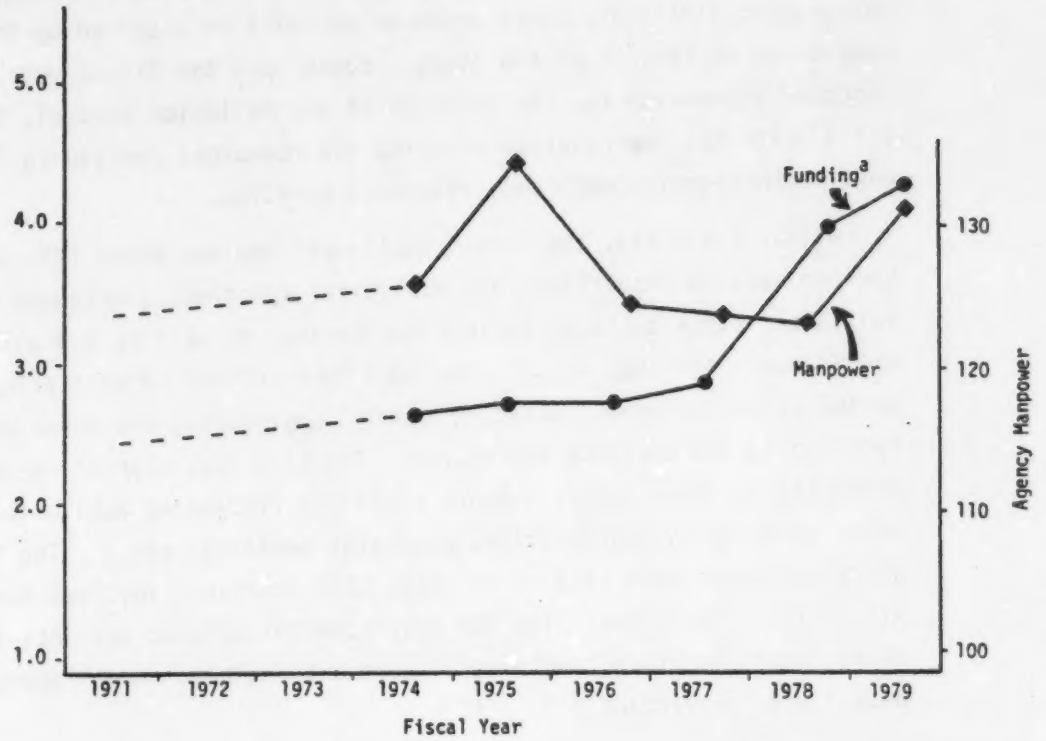
[1]Based upon fiscal year 1978 manpower allocation under the IEPA program plan.



[a] All resource estimates are based upon total statewide IEPA expenditures for the fiscal years shown. IEPA expenditures within the City of Chicago are currently being developed and will be illustrated at the completion of Task II of the study. (Source correspondence from Wayne E. Jones, Program Manager; IEPA; September 13, 1978.)

Figure 2-5. IEPA - Division of Air Pollution Control Resource History

Table 2-1. ENVIRONMENTAL PROTECTION AGENCY
AIR POLLUTION CONTROL
PROGRAM ACTIVITY BY CATEGORY
PERCENT OF DIVISION EFFORT

Program Category	Fiscal Year 1974 Actual		Fiscal Year 1975 Actual		Fiscal Year 1976 Actual		Fiscal Year 1977 Actual		Fiscal Year 1978 Estimated		Fiscal Year 1979 Estimated	
	K Dollars	Percent	K Dollars	Percent	K Dollars	Percent	K Dollars	Percent	K Dollars	Percent	K Dollars	Percent
Compliance	753.5	31.1	1,151.4	41.2	1,022.7	37.6	1,433.4	49.5	2,563.1	64.0	2,746.7	64.2
Prevention	1,175.0	48.5	1,233.7	44.2	1,290.5	47.5	1,043.4	36.0	933.6	23.3	975.4	22.8
Assistance	138.1	5.7	88.1	3.2	163.9	6.0	124.4	4.3	155.1	3.9	185.4	4.3
Grants	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Response	111.4	4.6	135.4	4.8	118.0	4.4	162.7	5.6	206.0	5.2	214.3	5.0
Administration	244.7	10.1	184.7	6.6	122.6	4.5	134.5	4.6	145.9	3.6	155.5	3.7
Total Percent		100.0		100.0		100.0		100.0		100.0		100.0
Total K Dollars	2,422.7		2,793.3		2,717.7		2,898.4		4,003.7		4,277.3	

Source: Correspondence from Wayne E. Jones, Program Manager; IEPA; September 13, 1978.

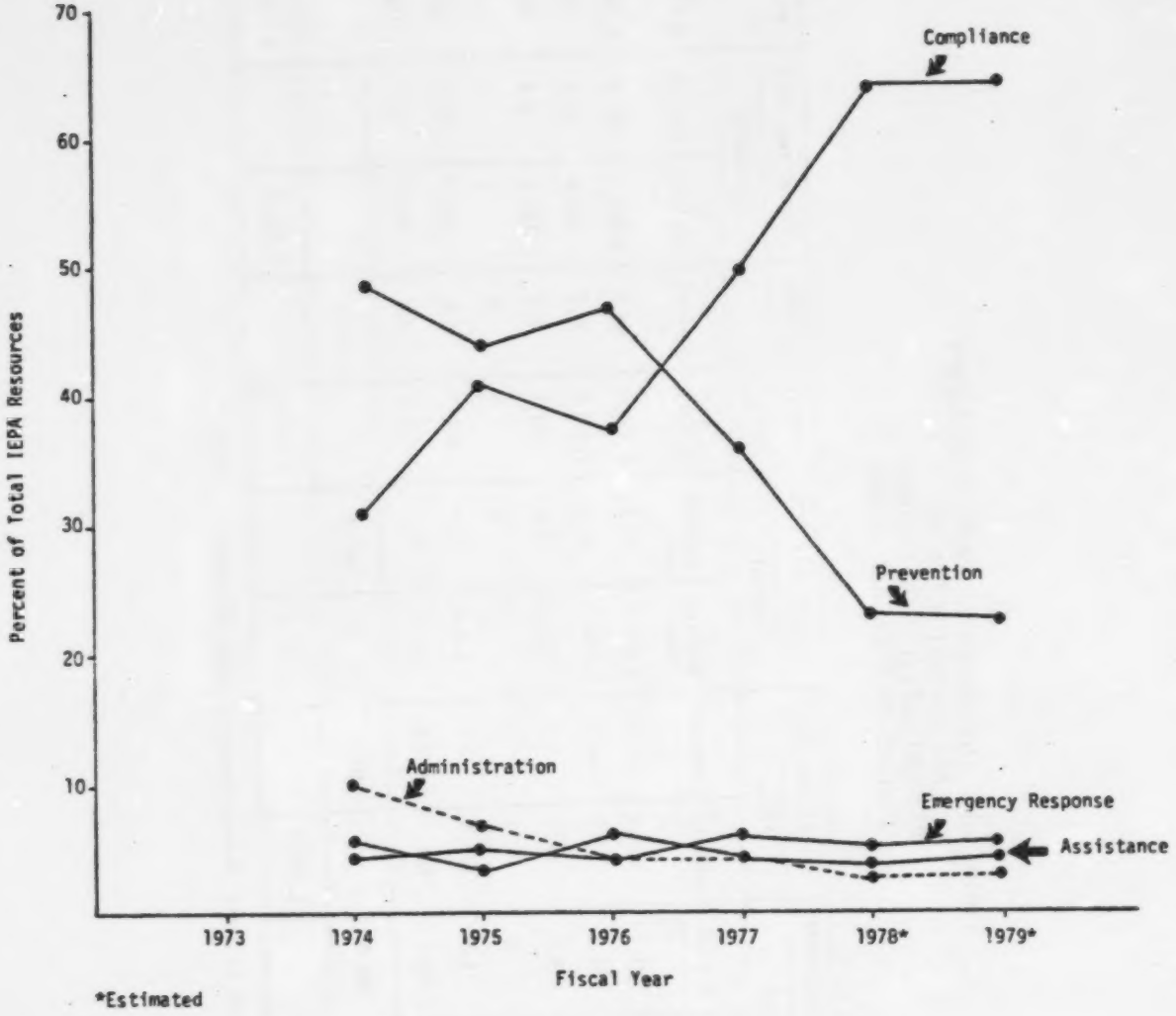


Figure 2-6. IEPA Program Elements as a Function of Total Statewide Resources

of May 31, 1975, as well as the need for subsequent SIP control strategy revisions. This resource shift has been maintained by IEPA since fiscal year 1976. Although the figures presented herein pertain to statewide estimates, PES is assuming that the figure is illustrative of IEPA efforts within the City of Chicago, as the majority of stationary sources are located within the metropolitan Chicago area. As indicated earlier, however, PES is continuing to work with the IEPA to develop city-specific resource estimates.

2.2.4 REGULATIONS

Under the Illinois Pollution Control Board Rules and Regulations[2], Rule 101 contains several key definitions upon which subsequent control regulations are based. The principal definitions contained under this rule which relate to one or more facets of those IEPA programs aimed at bringing about stationary source compliance are listed in Table 2-2. Rule 102 is a general prohibition of air pollution, whereby "No person shall cause or threaten or allow the discharge or emission of any contaminant... to cause or tend to cause air pollution in Illinois, or so as to violate the provisions of this chapter, or so as to prevent the attainment ambient air quality standard."

Rule 103 outlines the requirements of the Illinois permit program. The program requires both construction and operating permits by all affected facilities. The definitions of source and facility conform to those of the U.S. EPA, i.e, a source being a discrete point of emissions, and a facility being one or more sources at a site. Applications for renewal must be submitted to the IEPA, at which time the facility must document that it is still in compliance.

The remaining rules of importance to the IEPA programs aimed at assuring stationary source compliance are included in Table 2-3.

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[2]IPCB Rules and Regulations, Chapter 2, "Air Pollution; Part 1 General Provisions;" December 1976.

Table 2-2. KEY AIR POLLUTANT DEFINITIONS[a]

Air Contaminant: any solid, liquid, or gaseous matter, any odor, or any form of energy, that is capable of being released into the atmosphere from an emission source.

Air Pollution Control Equipment: any equipment or facility of a type intended to eliminate, prevent, reduce or control the emission of specified air contaminants to the atmosphere.

Air Pollution: the presence in the atmosphere of one or more air contaminants in sufficient quantities and of such characteristics and duration as to be injurious to human, plant, or animal life, to health, or to property, or to unreasonably interfere with the enjoyment of life or property.

Ambient Air: that portion of the atmosphere external to buildings comprising emission sources.

Commence: the act of entering into a binding agreement or contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

Construction: commencement of on-site fabrication, erection or installation of an emission source or of air pollution control equipment.

Emission Source: any equipment or facility of a type capable of emitting specified air contaminants to the atmosphere.

Existing Air Pollution Control Equipment: any air pollution control equipment, the construction or modification of which has commenced prior to the effective date of this Chapter.

Existing Emission Source: any emission source, the construction or modification of which has commenced prior to the effective date of this Chapter (1971).

Modification: any physical change in, or change in the method of operations, of an emission source or of air pollution control equipment which increased the amount of any specified air contaminant emitted by such source or equipment or which results in the emission of any specified air contaminant not previously emitted. It shall be presumed that an increase in the use of raw materials, the time of operation, or the rate of production will change the amount of any specified air contaminant emitted. Notwithstanding any other provisions of this definition, for purposes of permits issued pursuant to Rule 103, the Agency may specify conditions under which an emission source or air pollution control equipment may be operated without causing a modification as herein defined, and normal cyclical variations, before the date operating permits are required, shall not be considered modifications.

New Air Pollution Control Equipment: any air pollution control equipment, the construction or modification of which is commenced on or after the effective date of this Chapter.

New Emission Source: any emission source, the construction or modification of which is commenced on or after the effective date of this Chapter.

Owner or Operator: any person who owns, leases, controls or supervises an emission source or air pollution control equipment.

Person: any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, political subdivision of this State, any other State or political subdivision or agency thereof or any legal successor, representative, agent, or agency of the foregoing.

[a] Illinois PCB Rules and Regulations; Rule 101; Revised December 1976. Originally effective 1971

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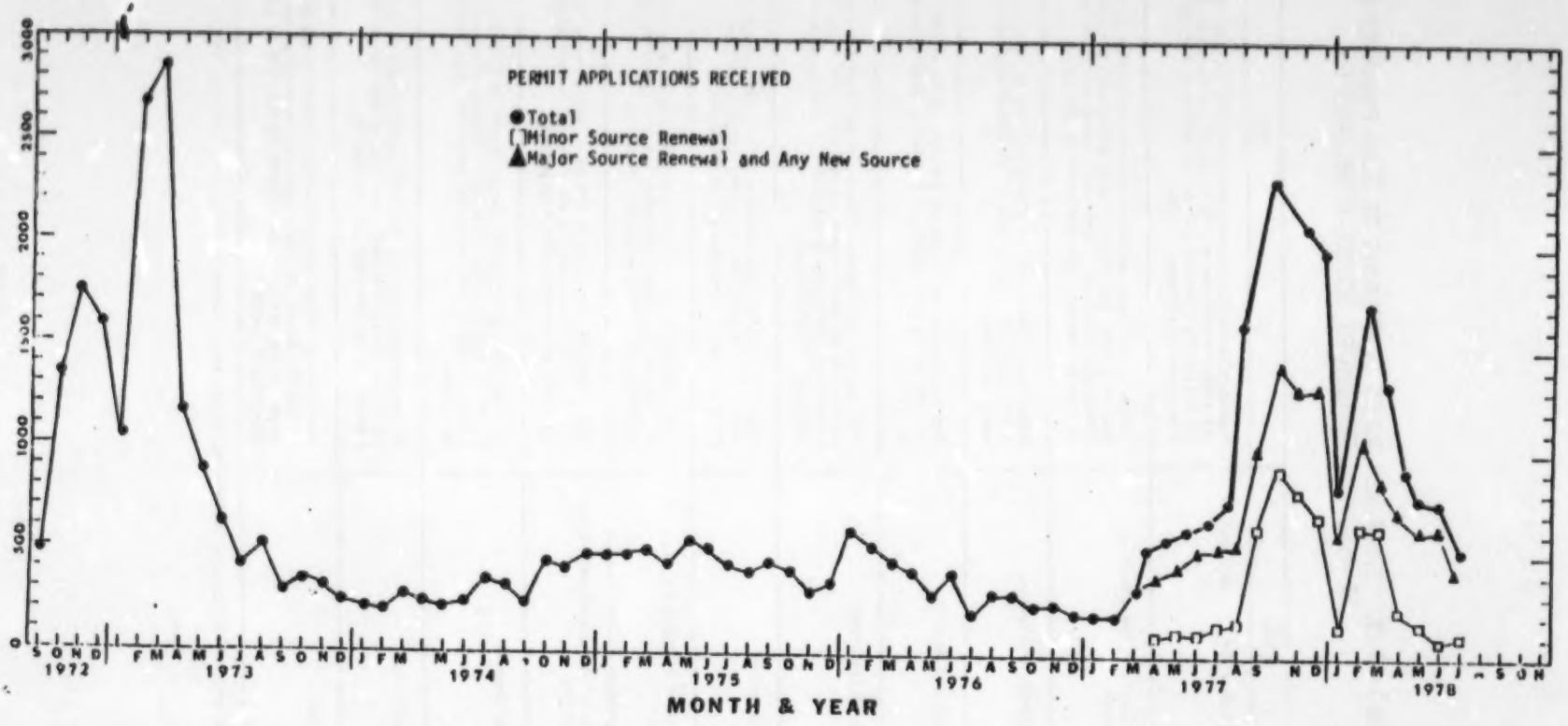
PERMIT APPLICATIONS RECEIVED
●Total
[ ]Minor Source Renewal
▲Major Source Renewal and Any New Source
0
500
1000
1500
2000
2500
3000
S O N D
1972
F M A M J J A S O N D
1973
J F M M J J A S O N D
1974
J F M A M J J A S O N D
1975
J F M A M J J A S O N D
1976
J F M A M J J A S N D
1977
J F M A M J J A S O N
1978
MONTH & YEAR

Figure 2-7. Permit Application Load

Table 2-3. OTHER KEY RULES PERTAINING TO IEPA PROGRAMS AIMED AT ASSURING STATIONARY SOURCE COMPLIANCE*

Rule	Title	Topic
104	Compliance Programs and Project	Prohibits operation of emission source not in compliance with applicable standards/limitations set forth in Part 2 (Emission Standards and Limitations for Stationary Sources) without a compliance program and a project completion schedule approved by IEPA.
105	Malfunctions, Breakdowns or Startups	Prohibits continued operation of emission source during malfunction or breakdown of control equipment if such operation will cause violation of emission standards/limitations. Prohibits excess emissions during startups, subject to special requests for permission to operate.
106	Monitoring and Testing	Establishes authority for IEPA to require facility monitoring equipment as a permit condition; and provides for control equipment testing by IEPA or the owner/operator.
107	Records and Reports	Requires source recordkeeping pursuant to Rules 104; 105; 106 plus records of all monitoring and testing; and requires submission of annual emission reports to IEPA.
108	Proof of Emissions	Provides for utilization of emission calculations based on emission factors accepted by persons engaged in the field of air pollution control as proof of emission limitation excedances (in absence of a showing that actual emissions are in compliance).
109	Circumvention	Prohibits construction/operation of any device/means which without actual reductions in pollutant emissions conceals, dilutes or permits air contaminant emissions which otherwise are in violation.
110	Design of Effluent Exhaust Syste-	Prohibits operation without providing one or more stacks designed to prevent air contaminant from: exceeding ambient standard; causing air pollution; exceeding applicable emission limitation.
111	Burden of Persuasion Regarding Exceptions	Any exceptions contained in the rules which appear to benefit a particular facility, must be proven by the facility owner/operator to apply, and that the terms of the exception have been met.
112	Annual Report	Requires IEPA to submit an annual report to IPCB listing all sources requiring operating permits under Rule 103; listing pollutants emitted; existing and planned controls; and scheduled dates for completion of improvements by facilities.
113	Severability	Any provisions/rules subsequently judged invalid, or their applicability to any person or circumstance, does not affect the validity of the Chapter as a whole, or any part not judged invalid.
114	Repealer	Provisions of "Rules and Regulations Governing the Control of Air Pollution" (as amended August 19, 1969) applying to emission sources shall remain in force, unless and until such source is required to comply with a corresponding provision of Chapter 2.

*IPCB Rules and Regulations, Chapter 2; "Air Pollution; Part 1 General Provisions;" December 1976.

As seen by the previous summary of key rules, regulations and definitions, no specific definition of "compliance" exists. Instead, the term is defined "in practice" as the result of certain actions (or the lack thereof). More specifically, compliance by a particular stationary source is governed by applicable rules including Rules 101 through 111 as listed above. That is, a facility can be deemed as being "out of compliance" by failing to meet any of the provisions contained in the previous rules (such as: operating without an appropriate permit; failure to report a malfunction; modifying a facility without first receiving a permit if necessary; failure to keep required records and reports; etc.).

In addition to the above requirements, a facility must comply with all emission limitations contained in Part II: "Emission Standards and Limitations for Stationary Sources." The specific rules and their self-explanatory titles are listed below. Each applicable rule is by pollutant for both fuel combustion and process emissions. Generally, units are reported in mass emissions per heat input for combustion and emissions per process throughput for process emissions.

Rule	Title
201	Definitions
202	Visible Emission Standards and Limitations
203	Particulate Emission Standards and Limitations
204	Sulfur Standards and Limitations
205	Organic Material Emission Standards and Limitations
206	Carbon Monoxide Emission Standards and Limitations
207	Nitrogen Oxides Emission Standards and Limitations
208	Compliance Dates

Finally, under the provisions of Rules 101 to 111, a facility may be out of compliance if it is found to contribute to, or cause the violation of one or more of the State Ambient Air Quality Standards. The ambient standards are included in Part III: "Air Quality Standards." The applicable rules are listed below.

Rule	Title
301	Preamble (Regulatory goals and objectives)
302	Applicability (Statewide applicability)
303	Nondegredation
304	Effective Date (10 days after filing with Secretary of State)
305	Monitoring (Pollutant levels determined beyond premises on which source is located)
306	Reference Conditions ($25^{o}C$; 760 mm of mercury)
307	Particulates
308	Sulfur Oxide (Sulfur dioxide)
309	Nonmethane Hydrocarbons
310	Carbon Monoxide
311	Nitrogen Dioxide
312	Photochemical Oxidants

In addition to the above general provisions, Part II of the IPCB Rules and Regulations contains "Emissions Standards and Limitations for Stationary Sources."

2.3 CHICAGO DEPARTMENT OF ENVIRONMENTAL CONTROL

2.3.1 ENABLING LEGISLATION

On December 16, 1969, Chapter 17 of the Municipal Code of Chicago was enacted. This established the Environmental Control Ordinance for the City, and created the Chicago Department of Environmental Control (CDEC). The department is under the supervision and direction of the Commissioner of Environmental Control, who is appointed by the Mayor, with the advice and consent of the City Council. The ordinance also established an Advisory Environmental Control Committee to the CDEC. The committee is to contain eight members including the Commissioner of the Department of Streets and Sanitation, the Commissioner of the Department of Health, the Commissioner of the Department of

Buildings. All members of this committee including the three non-Commissioners are appointed by the Mayor. Finally, the ordinance created an Appeal Board, consisting of five members appointed by the Mayor from the following professions and occupations: law; medicine; engineering; science; business; and labor. The relationships and overall responsibilities of the three entities are depicted in Figure 2-8.

As indicated in Figure 2-8, the CDEC is charged primarily with the responsibility to execute the environmental laws contained in the ordinance. Further, the CDEC is empowered to make inspections of facilities, initiate enforcement proceedings, perform construction permit reviews, as well as performing general or specific environmental studies. The Environmental Control Committee is essentially an advisory group. The committee's central focus is to assist the CDEC in gathering industrial/municipal support of the control regulations, advising the CDEC with respect to rule changes, and instituting research and education programs and/or studies. Finally, the Appeal Board is essentially a regulatory group, with responsibilities for considering appeals to CDEC rulings and determinations.

2.3.2 CDEC ORGANIZATION

The CDEC is organized around functional lines, with all groups spanning most pollutant medias, i.e., air, water, noise, solid waste, etc. along categorical program areas. The CDEC organizational chart is illustrated in Figure 2-9. Within the CDEC, the various program groups are organized as follows: Engineering, Technical Services, Enforcement, Inspectional Services, and Mobile Services. Concerning these areas aimed at assuring stationary source compliance, the Engineering Group is responsible for reviewing construction plans and construction permit approval recommendations, source sampling, and emissions data gathering. The Enforcement Group provides complaint

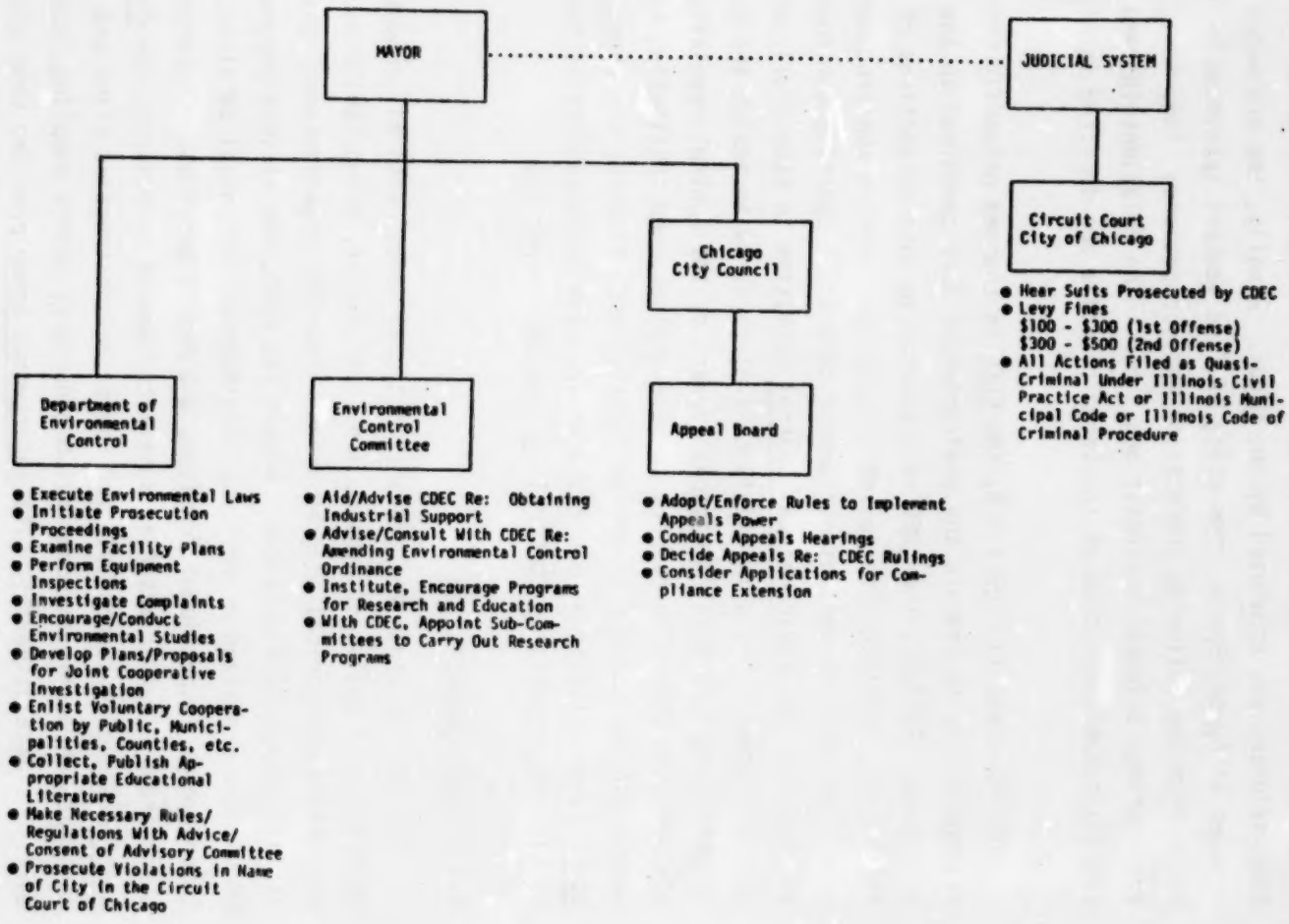
MAYOR
JUDICIAL SYSTEM
Chicago City Council
Circuit Court City of Chicago
Department of Environmental Control
Environmental Control Committee
Appeal Board
● Hear Suits Prosecuted by CDEC
● Levy Fines
$100 - $300 (1st Offense)
$300 - $500 (2nd Offense)
● All Actions Filed as Quasi-Criminal Under Illinois Civil Practice Act or Illinois Municipal Code or Illinois Code of Criminal Procedure
● Execute Environmental Laws
● Initiate Prosecution Proceedings
● Examine Facility Plans
● Perform Equipment Inspections
● Investigate Complaints
● Encourage/Conduct Environmental Studies
● Develop Plans/Proposals for Joint Cooperative Investigation
● Enlist Voluntary Cooperation by Public, Municipalities, Counties, etc.
● Collect, Publish Appropriate Educational Literature
● Make Necessary Rules/Regulations With Advice/Consent of Advisory Committee
● Prosecute Violations in Name of City in the Circuit Court of Chicago
● Aid/Advise CDEC Re: Obtaining Industrial Support
● Advise/Consult With CDEC Re: Amending Environmental Control Ordinance
● Institute, Encourage Programs for Research and Education
● With CDEC, Appoint Sub-Committees to Carry Out Research Programs
● Adopt/Enforce Rules to Implement Appeals Power
● Conduct Appeals Hearings
● Decide Appeals Re: CDEC Rulings
● Consider Applications for Compliance Extension

Figure 2-8. City of Chicago Environmental Control Structure

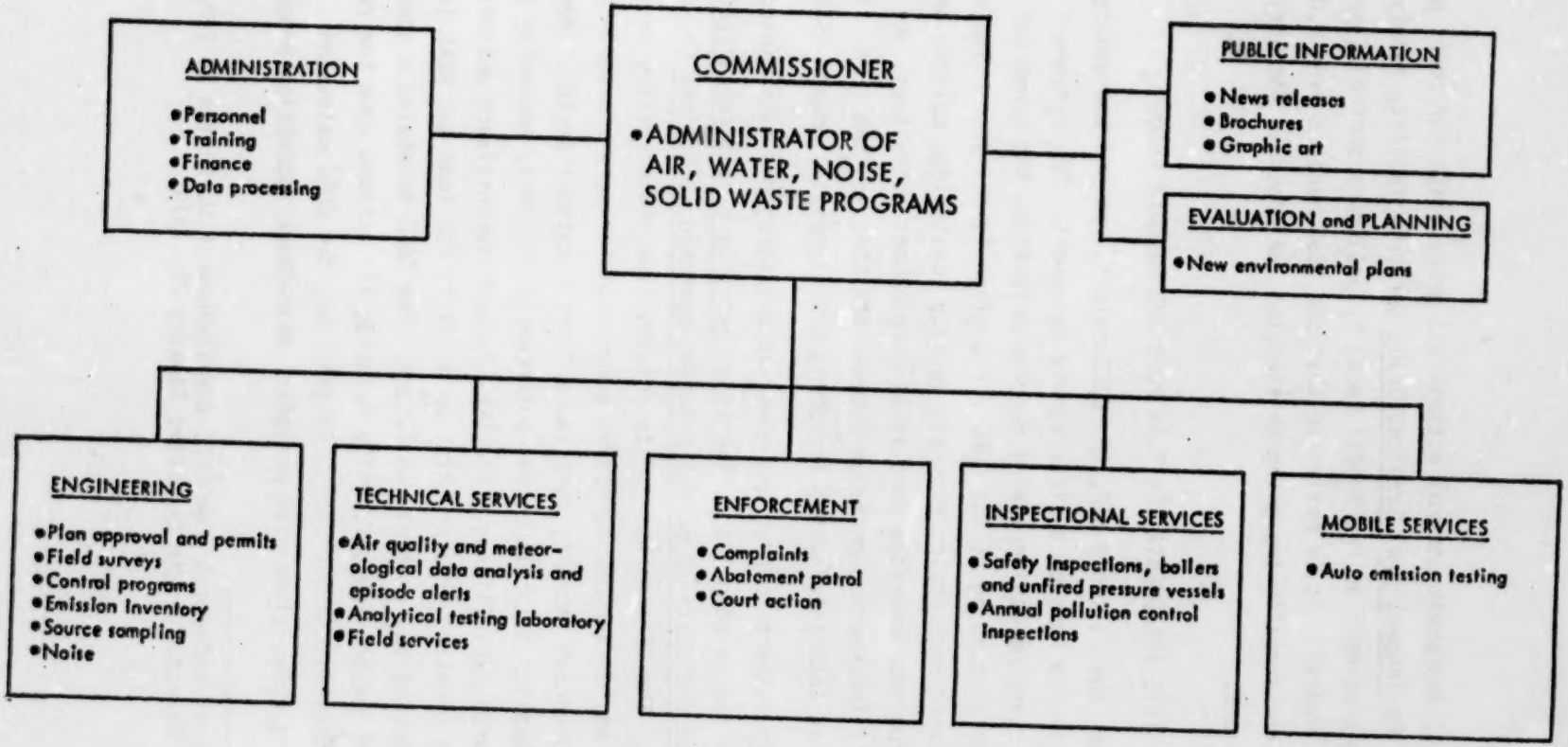

Figure 2-9. Functional Organization Chart, Chicago Department of Environmental Control, 1977

handling, abatement control actions and preparation for court proceedings. The Inspectional Services Group performs facility safety inspections as well as the annual facility pollution control inspections. Overall, it is estimated that the CDEC handles over 3,000 facilities annually including unscheduled, unannounced facility inspections.

2.3.3 STATE IMPLEMENTATION PLAN ROLE AND PROGRAM RESOURCES

Under the Illinois SIP, the CDEC role is revised and updated annually in the form of an interagency agreement. The agreement reflects changing environmental program priorities and forms the basis for Federal funding of the CDEC for a given fiscal year. The agreement covers such topics as: Air quality monitoring; episode and incident programs; asbestos demolition enforcement activities; and general facility information exchange between the CDEC and the IEPA. The most recent of such interagency agreement was signed in January 1978.[3].

With respect to programs aimed at obtaining and maintaining stationary source compliance, the interagency agreement recognizes two separate and distinct permit programs operated within the Chicago City limits. The IEPA maintains its construction and operating permit system while the CDEC maintains a construction permit program coupled with an annual facility compliance "certification" system. Moreover, both agencies maintain mutual enforcement programs, including systems for source surveillance. The IEPA focuses surveillance activities on sources emitting greater than, or equal to 100 tons per year (actual) emissions of any criteria pollutant. The CDEC maintains a spot check of such "major" sources, while focusing its actions upon the remaining facilities within the City. In addition, the CDEC maintains a stack sampling role, along with periodic, spot-check inspection programs.

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[3]Letter of Agreement from CDEC Commissioner H.W. Poston to IEPA Acting Director M. Mauzy, dated January 23, 1979.

Since its creation, the CDEC has grown steadily to its present manpower capacity of approximately 275 people. Of this total, approximately 85 to 90 percent of the staff are assigned to air pollution control. The overall resource history of the agency is depicted in Figure 2-10.

The overall CDEC operations plan is subdivided into the following program elements:

- o Air pollutions;
- o Noise abatement;
- o Water pollution control;
- o Solid waste disposal;
- o Boiler/pressure vessel/safety; and
- o General support (including administration, evaluation and planning, and public information).

Table 2-4 and Figure 2-11 illustrate the general trend in CDEC personnel expenditures since 1972. This expense category represents by far the greatest budget item for CDEC. This is, in part, due to the fact that the CDEC has maintained a resource-intensive approach to compliance over the years, which includes the agency's extensive mobile inspector fleet. As indicated in the chart/figure, the personnel expenses have averaged exactly one-half (i.e., 50.1 percent) of the total CDEC air pollution budget since 1972. This percentage has been maintained as the CDEC budget has grown from $2.6 million to $4.1 million (i.e., 54 percent).

Table 2-5 provides an overview of the percent of total resources devoted to those air pollution programs aimed at bringing about stationary source compliance. As indicated in this table, the CDEC has been applying approximately 12 percent of its overall budget to the permits program. When combined with the enforcement and inspections resources, the agency is applying approximately 42 percent of its overall resources to programs aimed at bringing about stationary source compliance.

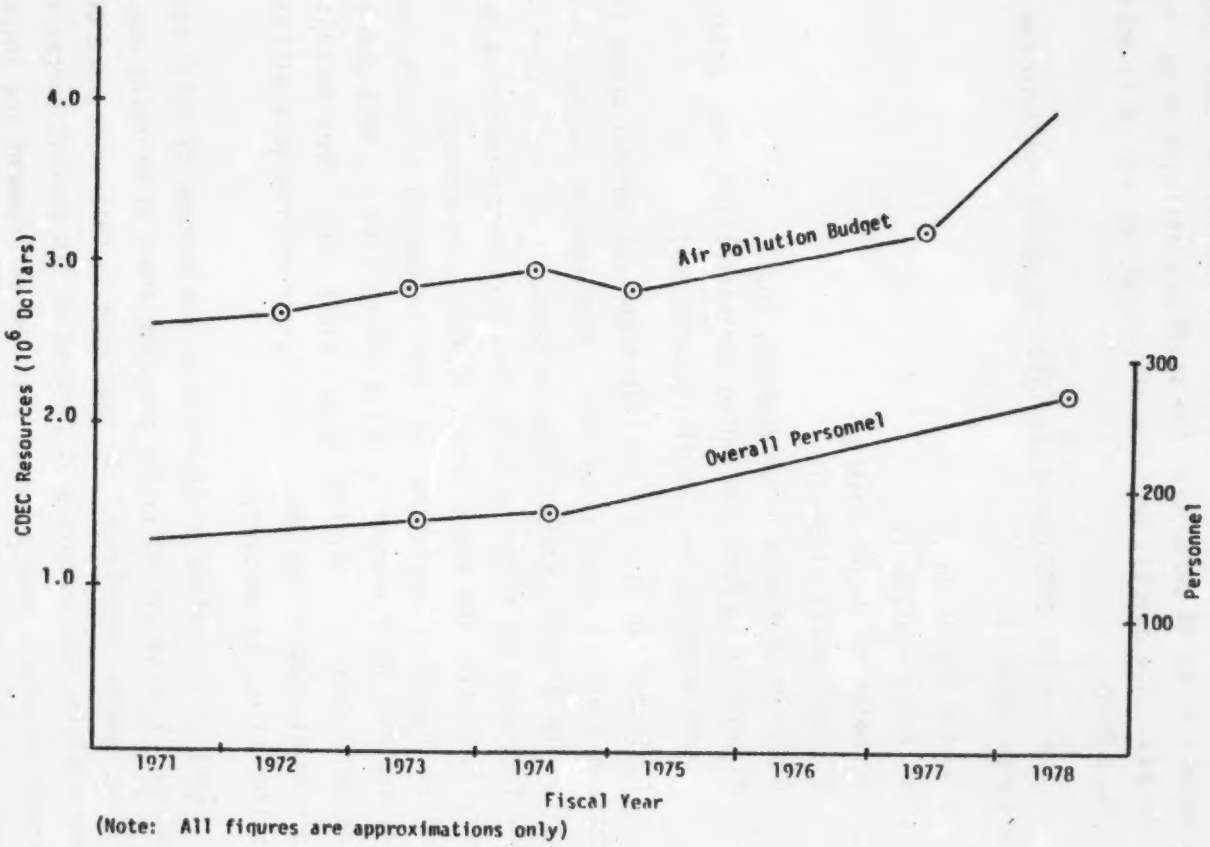

Figure 2-10. CDEC Overall Resource History

Table 2-4. CDEC BUDGET - 1972-1978

Air Pollution Activities

Category	1972	1973	1974	1975	1976	1977	1978
Personnel	1,456,172	1,301,179	1,325,333	1,270,509	NA	1,483,805	2,062,300
Fringe Benefits		122,040	72,000	161,174	NA	227,184	285,500
Travel	7,166	27,272	5,000	30,000	NA	16,425	106,500
Equipment	125,794	132,937	188,700	98,000	NA	136,900	97,300
Supplies	90,303	63,782	65,000	107,500	NA	113,600	82,800
Contractual	30,000	48,825	109,000	108,000	NA	178,500	98,500
Construction	149,893	65,000	48,000	10,000	NA	---	---
Other		116,637	72,500	---	NA	10,000	434,800
Indirect Charges	790,172	726,058	779,712	801,312	NA	1,014,616	921,120
Total	2,650,759	2,603,730	2,665,245	2,586,495	NA	3,181,030	4,088,820

All figures (except as noted) for calendar year.

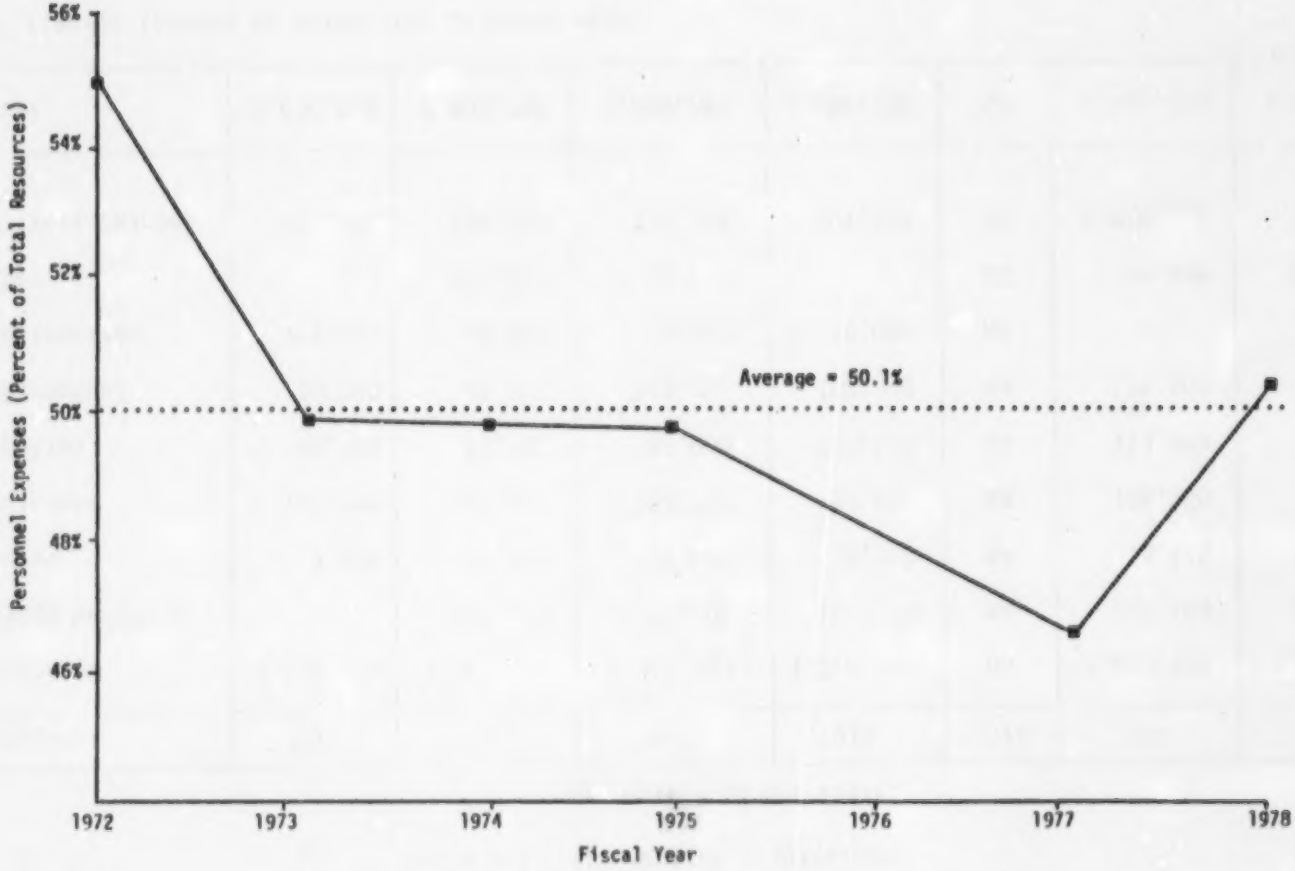

Figure 2-11. CDEC Personnel Expenses as Percent of Total Resources

Table 2-5. CDEC PROGRAM/RESOURCE DISTRIBUTION

Program Element	Planned Allocation		Percent of Total	
	FY 77	FY 78	FY 77	FY 78
• Permits	$ 460,000	$ 497,000	10.4	11.7
• Enforcement	607,000	638,000	13.8	15.0
• Inspections/Monitoring	600,000	640,000	13.6	15.0
Other Programs For Comparison				
• Auto Emissions	1,469,000	1,210,000	33.3	28.4
• Noise Abatement	130,000	141,000	2.9	3.3
• Water Pollution Control	86,000	107,000	1.9	2.5
• Solid Waste Disposal	28,000	21,000	0.6	0.4
• Boiler/Pressure Vessel and Fuel Burning Safety	550,000	536,000	12.5	12.6
• Administration	350,000	337,000	7.9	7.9
Total CDEC Program	4,413,000	4,265,000	----	----

As discussed previously, Table 2-4 lists the CDEC budget for 1972 through 1978. The overall air programs budget remained fairly constant from 1972 through 1977 (approximately 2.6 million per year). However, the budget rose dramatically in 1977 and 1978 where the major expenditure increase appeared in the personnel budgets outlays. Two factors entered into this increased costs: (1) an increase in personnel in the air programs section of approximately 50 employees; and (2) salary increased due to cost of living adjustments. As shown in Table 2-6 the majority of personnel expenses were divided between the Technical and Enforcement Branches of the CDEC. The "inspectional personnel" listed in these tables represent boiler inspectors, etc. The Technical Branch of CDEC includes but is not limited to the following personnel: chemists, laboratory technicians, weather equipment technicians, environmental sampling and equipment technicians. These personnel act as a support group to the Engineering and Enforcement Branch. The Enforcement Branch is composed of approximately 40 environmental control inspectors and three graduate engineers. These inspectors investigate small boiler operations and constitute the CDEC mobile inspection force The Engineering Branch has 10 graduate engineers which both inspect and analyze complex boiler installations and industrial sources. The Engineering Branch also conducts reviews of permit applications and variance requests. The inspectional personnel listed in these tables represent boiler inspectors. The sharp drop in the direct cost figure for this group can be attributed to two factors: (1) the decline in the total number of small boiler operations in the City; and (2) the overlapping of the Enforcement Branch with the Inspectional Section.

Specific cost figures for the four CDEC program elements listed in the table were only available for two years (1973 and 1975). But CDEC personnel assignments have remained fairly constant through 1978.

Table 2-6. MAJOR PROGRAM ELEMENTS AND OUTPUTS

DIRECT COST - 1973[a]

Program Elements	Percent	Man-Years	Personnel Funds
Technical	36.6	43	449,052
Enforcement	31.9	39	391,382
Engineering	6.4	6	77,994
Inspectional	25.1	23	307,902
TOTAL	100.0	111	1,226,330

[a] Reference: Fiscal Year 1973 Federal Grant Application; CDEC

DIRECT COST - 1975[a]

Program Elements	Percent	Man-Years	Personnel Funds
Technical	33.9	30.49	400,248
Enforcement	44.3	34.29	522,426
Engineering	18.0	15.75	212,112
Inspectional	3.8	2.40	45,040
TOTAL	100.0	82.93	1,179,826

[a] Reference: Fiscal Year 1975 Federal Grant Application; CDEC

2.3.4 REGULATIONS AND KEY PROGRAMS

Under Article II of the Environmental Control Ordinance entitled "Air Pollution Control," Regulations 17-2.1 to 17-2.69 outline the various definitions, particulate and sulfur dioxide emissions limitations, permit requirements and fees, as well as regulations for the control of carbon monoxide and nitrogen oxide emissions. Article IIA contains provisions for the inspection of motor vehicles.

Table 2-7 outlines the various key regulations under which the CDEC operates with respect to programs aimed at achieving stationary source compliance. The regulations are contained in Chapter 17 of the Municipal Code of Chicago; Environmental Control Ordinance (enacted December 16, 1969; amended January 1, 1975).

Table 2-7. CDEC REGULATIONS SUMMARY PERTAINING TO STATIONARY SOURCE COMPLIANCE

Regulation	Title	Topic
17-2	Definitions	Lists definitions for various process/boiler elements; control equipment; etc.
17-2.3	Opacity Limitations	Defines opacity limits, time periods, and smoke reader qualifications.
17-2.4	Emission of Particulate Matter	Defines facility TSP emission limits.
17-2.5	Other Limitations	Outlines sulfur limits in fuel; allowable sulfur dioxide concentrations; sampling programs; episode alert program.
17-2.6	Atmospheric Pollution Prohibited	Prohibits discharge, release or emission of pollutants within city limits or within 1 mile of city limits.
17-2.7	Nuisance: Abatement	Any particulate emission in excess of limits established in 17-2.3; 17-2.4 or 17-2.5 are declared a public nuisance.
17-2.8	Nuisance: Preservation of Common Law Rights	Provides for cause of action or legal remedy against nuisance.
17-2.9	Failure of Owners and Operators	Failure to comply is a violation of the ordinance, subject to fine.
17-2.11	Dilution or concealment of Emissions Prohibited	General prohibition of emissions dilution or concealment.
17-2.13	Handling of Materials Susceptible to Becoming Wind-Borne	General prohibition against fugitive emissions, with the Commissioner of CDEC having jurisdiction and authority over fugitive emission sources.
17-2.14	Storage of Materials Susceptible to Becoming Wind-Borne.	
17-2.15	Jurisdiction of Wind-Borne Violations	
17-2.16	Notices of Violation	Commissioner, CDEC authorized to issue Notices of Violation.
17-2.28	Installation Permit Required for Fuel Burning, Refuse Burning, Compactor, Combustion and Process Equipment and for High-Pressure Furnace Repair	Prohibition of construction, modification without the issuance of installation permit by the CDEC.
17-2.29	Contents of Plans and Specifications	Outlines information necessary to determine the emission potential of process.
17-2.35	Notification of Completion of Installation-Certificate of Operation	Source must notify CDEC at time of project completion when CDEC inspectors visit plant and issue a Certificate of Operation.
17-2.36	No Installation Permit or Noncompliance With Plans - Authority to Seal	If facility failed to apply for or conform with specifications on an installation permit the CDEC has the authority to seal the installation.
17-2.37	Penalty for Lack of Installation Permit	Source failing to obtain installation permit subject to fines described in Regulation 17-2.60.
17-2.40	Annual Inspections	Requires CDEC to inspect all fuel burning, refuse burning, compactor combustion, or process equipment annually.
17-2.41	Certificate of Operation to be Posted - Contents	Certificate of Operation must be posted in a conspicuous place.
17-2.42	Certificate of Operation Required	It is unlawful to operate any fuel burning, refuse burning, compacting, combustion or process equipment without an effective Certificate of Operation.
17-2.43	Government and Municipal Fuel Burning, Refuse Burning, Compactor Combustion, or Process Equipment	Annual inspections shall also be conducted on all Federal, State, and local governments facilities. No fees are charged for these inspections.
17-2.44	Permit Fees	Permit fees outlined for specific equipment - fees range from $5.00 to $30.00.
17-2.45	Original Inspection Fees	Original inspection fees outlined for special equipment - fees range from $10.00 to $50.00.
17-2.46	Annual Inspection Fees	Annual inspection fees outlined for special equipment - fees range from $5.00 to $25.00.
17-2.47	Payment of Fees	Fees are to be paid to the commissioner.
17-2.51	Breakdown of Equipment Report of; Immunity From Prosecution	Malfunction reporting requirements.
17-2.52	Tests of Fuel Burning, Combustion of Process Equipment	The CDEC is authorized to conduct or cause to be conducted any test or tests as may be necessary to determine the extent of emissions.
17-2.53	Period of Grace	The Commissioner may grant a period of grace to sources which require a time extension on the installation of control equipment.
17-2.54	Technical Advisory Board	Board established to aid the Commissioner in reaching technically correct decisions.
17-2.55	Variances	Variances may be granted by the Appeal Board whenever the Board decides adequate proof has been presented.
17-2.56	Citation, Hearing and Sealing of Equipment	Time table for citations, hearings and possible sealing of facility.
17-2.57	Sealing of Fuel Burning, Combustion and Process Equipment	Conditions under which facility may be sealed.
17-2.58	Breaking Seal	Describes penalties for the breaking of a seal.
17-2.60	Penalties	Outlines penalties for noncompliance - range from $100 to $500. Possible misdemeanor charge.
17-2.67	Carbon Monoxide Emissions	Carbon monoxide emission limitations for petroleum and petrochemical processes, sintering plants, blast furnaces, and basic oxygen furnaces.
17-2.68	Nitrogen Oxide Emissions	Same nitrogen oxide emission limitations as those promulgated by the State of Illinois Control Board set forth in Chapter 2, Part II, Rule 207.
17-2.69	Fugitive Particulate Emissions	Fugitive emission standards outlined.

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3.0 AGENCY PROGRAMS

Presented in this section are descriptions of the Illinois Environmental Protection Agency and Chicago Department of Environmental Control regulatory programs. These descriptions cover relevant aspects of each agency's regulatory program. These will be followed by relevant examples (Section 4.0)

3.1 ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Act authorized the Illinois Environmental Protection Agency to gather data and permit sources of air pollutants. After completing its initial task of promulgating regulations and establishing its organization, the substantial effort associated with establishing the permit system commenced.

The Permits Section began obtaining mailing lists from various sources. Trade organizations and the news media were used to make the permit requirements known. Permit applications were disseminated and those returned constituted the base system. After the initial establishment of this system, follow-up procedures brought most of the remaining sources known at that time into the system, since all sources are required to obtain permits. The State believes that sources contributing 95 percent of the total pollutants emitted are accounted. Small sources that are subsequently discovered, usually by field operations, are quickly brought into the system since all sources are required to obtain permits. The initial entry into the permit process whether in 1972-1973 or later does not necessarily mean compliance with applicable regulations.

Since a permit cannot be issued to a non-complying source, a valid permit is an indication that the source is in compliance. This common element to all the phases of compliance (i.e.,. pre-compliance, initial compliance, and maintenance of compliance) will be described in the next section.

3.1.1 THE PERMIT PROCESS

The permit process utilizes forms for applicants, in-house procedures for tracking applications and flow charts, and written policies to ensure consistent engineering reviews.

A source's first interaction with the permit system is a preliminary inquiry (Form APC-206). This initial inquiry requests that the source briefly describe its operation so that the permit section can make a preliminary determination of any applicable regulation. The source is then sent the proper permit application forms. Illinois uses various forms for different classes of sources. In this manner, data can be gathered in terms familiar to each industry. The various forms which can be sent include the following.

APC-200	Application for a Permit
APC-203	Operation During Startup
APC-202	Compliance Program and Project Completion Schedule
APC-260	Data and Information; Air Pollution Control Equipment
APC-240	Data and Information; Fuel Combustion Emission Source
APC-220	Data and Information; Process Emission Source
APC-234	Data and Information; Concrete, Asphalt or Aggregate Crushing Plant
APC-250	Data and Information; Incinerator
APC-210	Data and Information; Incorporation by Reference
APC-207	Operating Permit Application for Petroleum Products. Storage with less than 40,000 gallons in any one tank and less than 40,000 gallons per day throughout.
APC-212	Application for Asbestos Permit
APC-198	Information Relative to the Demolition of a Structure Containing Asbestos Material

Once an application is received, Illinois' present permit procedures insure that:

- The permit is processed in a timely manner (a permit application not completed within 90 days of receipt is granted by default);
- the engineering review is thorough; and
- the evaluation and recommendation are consistent and not dependent on which individual actually did the review.

The procedures which Illinois uses include several noteworthy elements. When a permit is received a transfer sheet is attached. This sheet accompanies the application through the system, insures no aspect of the review is omitted, and documents which individuals were responsible for each activity. A copy of the transfer sheet is in Figure 3-1. Regional field offices are also notified so that they can supply input, if needed. Also part of this procedure is a computer information and tracking system. This computer system provides an updated record of the status of each application. A copy of the status update form and deficiency codes which illustrate the type of information on the computer file are found in Figures 3-2 and 3-3.

The review process itself has two major elements. First compliance with the applicable emissions limits itself. The compliance determination is based on a calculation of the actual uncontrolled emissions using AP-42 emission estimations techniques (other estimation techniques, if they have been demonstrated as more reliable, i.e., stack tests, are used on a case-by-case basis) in conjunction with the design removal efficiency of the control equipment. An engineering review of the control equipment's specifications is conducted to verify the reasonableness of this removal efficiency. Compliance is determined by comparison of the actual control annual emissions with the applicable regulation. The second element is the air quality review process is to determine whether the ambient Air Quality Standard will be met. All sources greater than 25 tons/year actual emissions are subjected to this second element of the review process. Flow charts which illustrate this review process are included as Figures 3-4 and 3-5.

To insure additional consistency in the engineering review, many flow charts, engineering methodologies, and policy guidance documents exist for the reviewing engineers.

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APPLICATION NO. _____

INITIAL	DATE	TRANSACTION
		RECEIVED
		ON QUARTERLY REPORT/FLAG FILE
		COPY TO REGION (NON-CONF)
		COPY TO COOK/CHI DEC (NON-CONF)
		APPLICATION TO EPISODE
		EPISODE APPROVED/PLAN REQ.
		PERMIT NOT REQUIRED
		103 TO DLPC - 104 TO DAPC
		AQA REQUIRED
		AQA COMPLETED
		OFFSET REQ. FOR _____
		OFFSET APPR (SUPERVISOR)
		ENGINEER REJECT
		ENGINEER REQ. ADD'L INFO.
		ENGINEER GRANT/DENY
		REVIEW REQUESTED
		APPRV. BY ANALYSIS SUPPORT
		APPRV. BY ANALYSIS SUPERVISOR
		LETTER APPR. BY ENGINEER
		COOK/CHICAGO GRANT/DENY
		APPLICATION WITHDRAWN

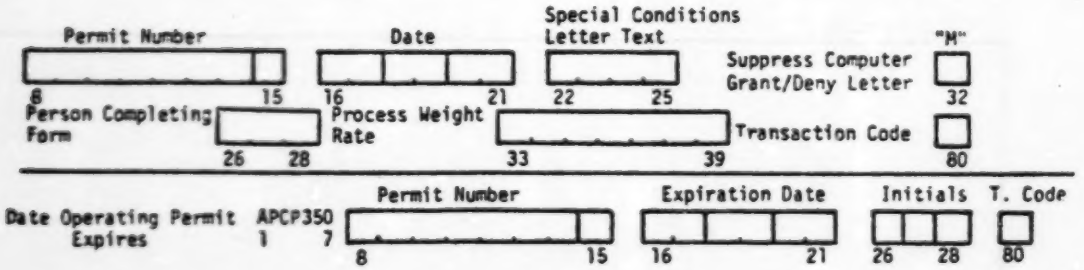
INITIAL	DATE	TRANSACTION
		SUBJECT TO NSPS/NESHAP
		NSPS/NESHAP LETTER APPROVED
		NSPS/NESHAP LETTER MAILED
		SUBJECT TO PSD
		PSD LETTER APPROVED
		PSD LETTER MAILED
		ADD'L INFO LETTER APPROVED
		ADD'L INFO LETTER MAILED
		PERMIT LETTER MAILED
		COPY OF PERMIT LETTER TO REGION
		COPY TO OTHER AGENCY
		COPY OF CONSTR. TO USEPA.
		OTHER COPY TO _____
		CONF. COPY RET. TO APPL.

SPECIAL COMMENTS:

AEC-300 Revised 4/78

Figure 3-1. Transfer Sheet DAPC Permit Application

☐ APCP216 (1 7)	FIELD INSPECTION REPORT REQUESTED	☐ APCP217 (1 7)	FIELD INSPECTION REPORT RECEIVED
☐ APCP213 (1 7)	COPY SENT TO REGIONAL OFFICE	☐ APCP220 (1 7)	APPLICATION REJECTED
☐ APCP230 (1 7)	APPLICATION FOR COMPUTER ANALYSIS	☐ APCP240 (1 7)	COMPUTER ANALYSIS COMPLETED
☐ APCP250 (1 7)	APPLICATION SENT TO ANALYSIS UNIT	☐ APCP255 (1 7)	COPY SENT TO COOPERATING AGENCY
☐ APCP200 (1 7)	ADDITIONAL INFORMATION REQUESTED TO APPLICANT	☐ APCP210 (1 7)	ADDITIONAL INFORMATION RECEIVED FROM APPLICANT
☐ APCP260 (1 7)	ENGINEERING ANALYSIS COMPLETED	☐ APCP280 (1 7)	APPLICATION SUBMITTED TO REVIEW UNIT
☐ APCP281 (1 7)	APPLICATION RECEIVED FROM REVIEW UNIT	☐ APCP270 (1 7)	REJECTED REAPPLICATION
☐ APCP290 (1 7)	APPLICATION SUBMITTED TO INTER-AGENCY BOARD	☐ APCP291 (1 7)	APPLICATION RECEIVED FROM INTERAGENCY BOARD
☐ APCP301 (1 7)	COMPLIANCE PLAN ACCEPTED	☐ APCP302 (1 7)	EPISODE PLAN SENT TO EPISODE SECTION
☐ APCP303 (1 7)	EPISODE PLAN ACCEPTABLE	☐ APCP304 (1 7)	EPISODE PLAN UNACCEPTABLE
☐ APCP310 (1 7)	PERMIT APPLICATION GRANTED	☐ APCP320 (1 7)	PERMIT APPLICATION DENIED
☐ APCP330 (1 7)	PERMIT LETTER TO BE TYPED	☐ APCP300 (1 7)	APPLICATION FOR ADMINISTRATIVE REVIEW
☐ APCP340 (1 7)	APPLICATION MAILED		



APC-157 (prev. - APC-134)

Figure 3-2. Division of Air Pollution Control Permit Section Permit Status Update

0113	☐	Permit did not have signed original.		
0114	☐	Permit not signed.	Sign. OK	☐
0115	☐	No letter of authorization on file.		
0116	☐	No flow diagram and requires one.	Flow Diagram OK	☐
0117	☐	Flow diagram is not adequate.		
0118	☐	Application does not contain plot plan.	Plot Plan OK	☐
0119	☐	Plot plan is not adequate.		
0120	☐	No P & I diagram (requires one).	P & I OK	☐
0121	☐	P & I diagram submitted but not adequate.		
0122	☐	Data & Information required (Attachment A).	Data & Info. OK	☐
0141	☐	Data & Information required (Checked in Red).		
0142	☐	Application does not contain exhibits (Attachment B).	Exhibits OK	☐
0169	☐	Application does not contain the following required items:	Other Info. OK	☐

0170	☐	A compliance Plan and/or Project Completion Schedule is required for the following emission sources:	Comp. Plan OK	☐
0171	☐	The Compliance Plan and/or Project Completion Schedule is not signed.		
0172	☐	The Compliance Plan and/or Project Completion Schedule submitted was not the signed original.		
0173	☐	The Compliance Plan and/or Project Completion Schedule is signed by an unauthorized person.		
0174	☐	Compliance Plan is not correct or is insufficient.		
0175	☐	Project Completion Schedule is inadequate or later than required Regulations.	P.C.S. OK	☐
0176	☐	Episode Action Plan is required and not enclosed or on file.	Episode OK	☐
0177	☐	Episode Action Plan is not acceptable.		
0178	☐	Project Completion Report is required to prove completion of Compliance program submitted with previous operating permit.		

APC-218 Rev. 3/76

Figure 3-3. Deficiencies

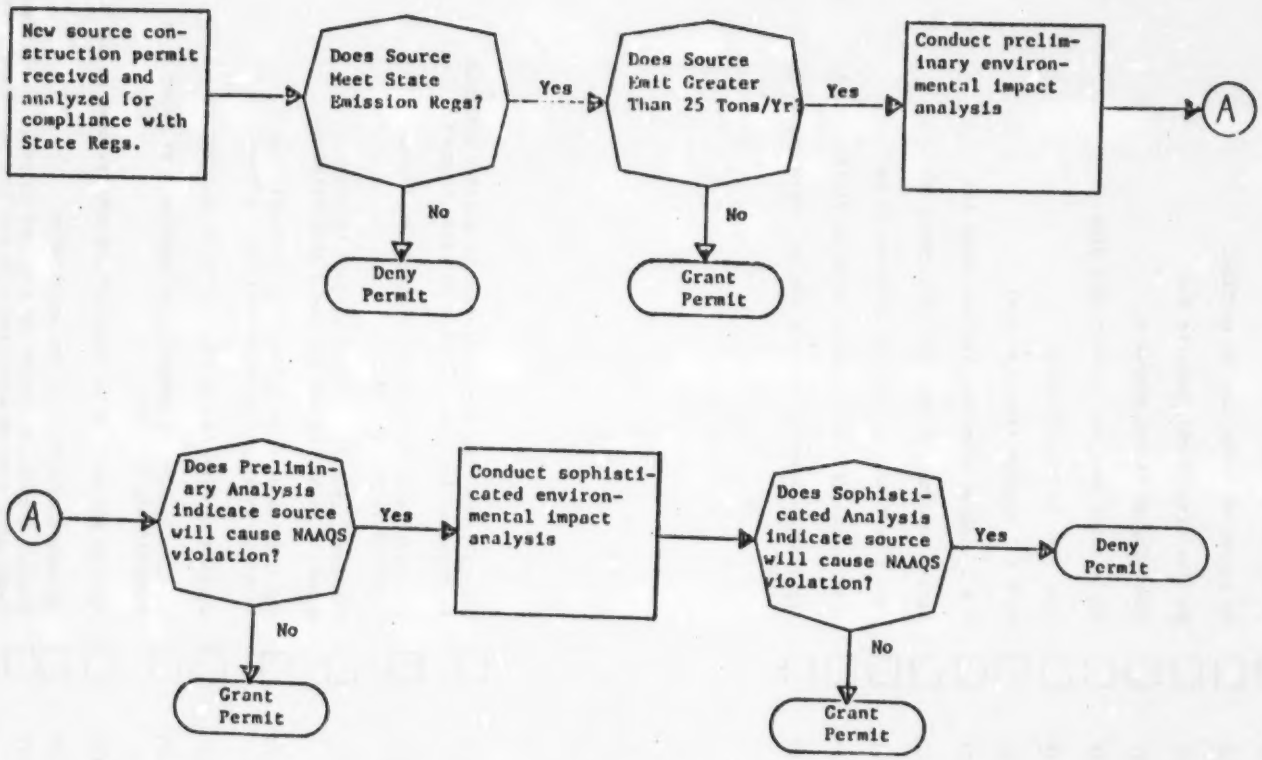


Figure 3-4. Flow Diagram for the Illinois Environmental Protection Agency: New Source Review Process

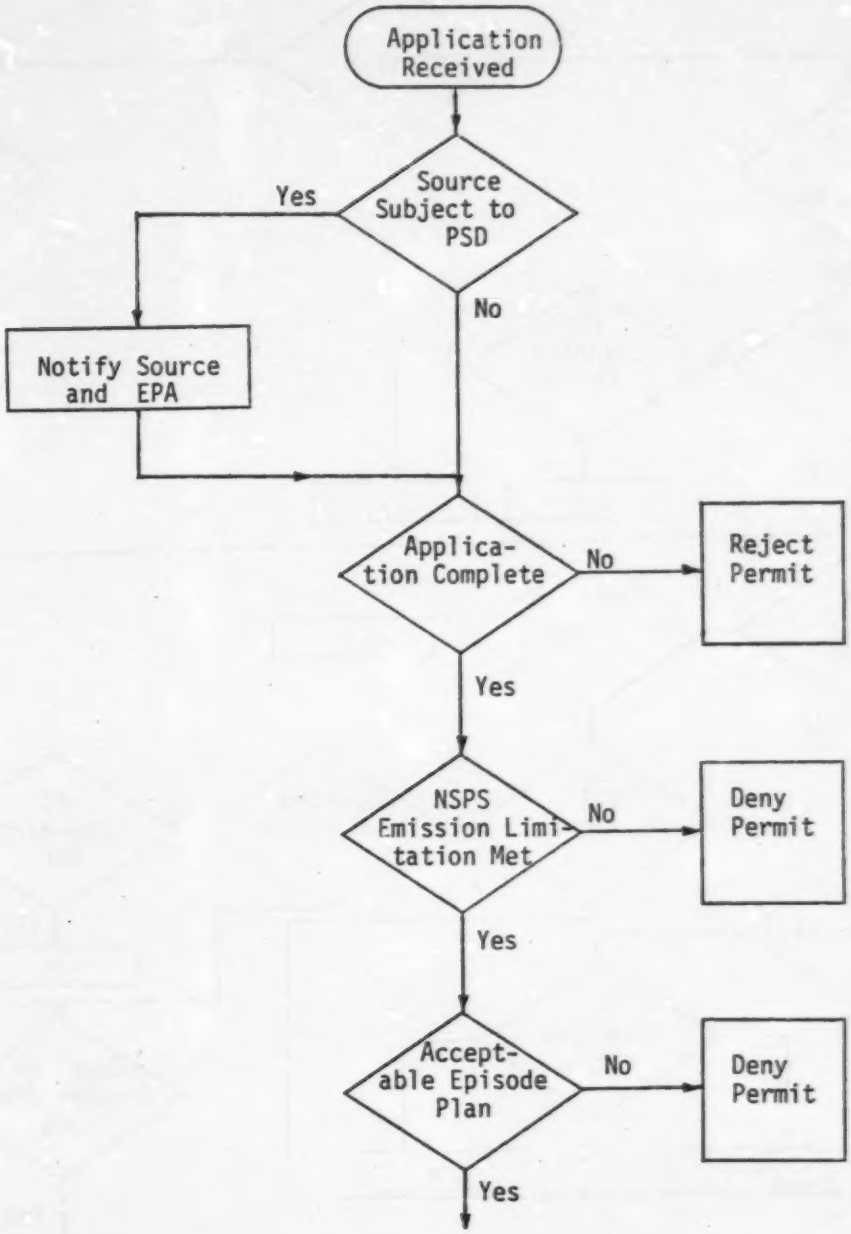
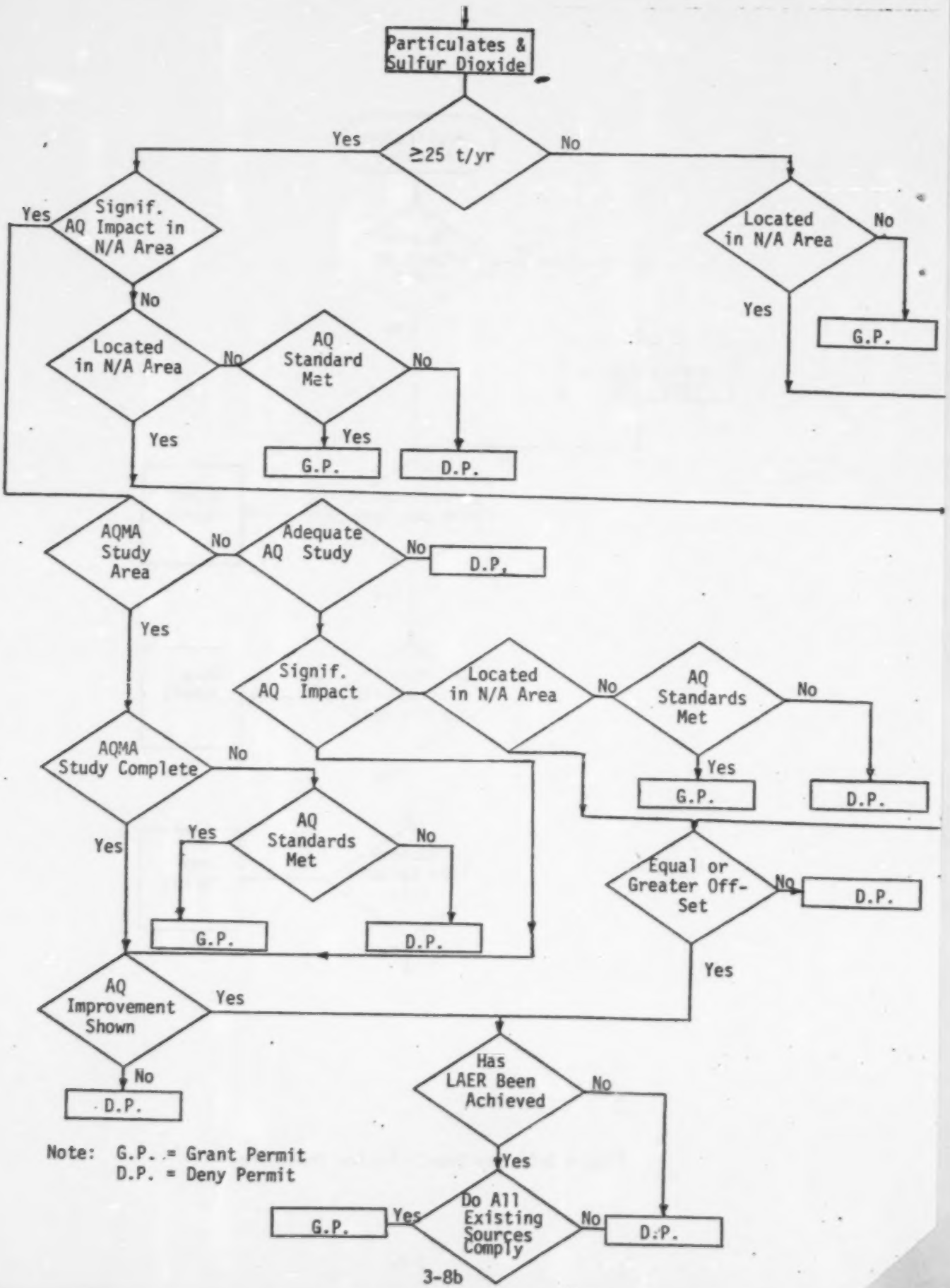
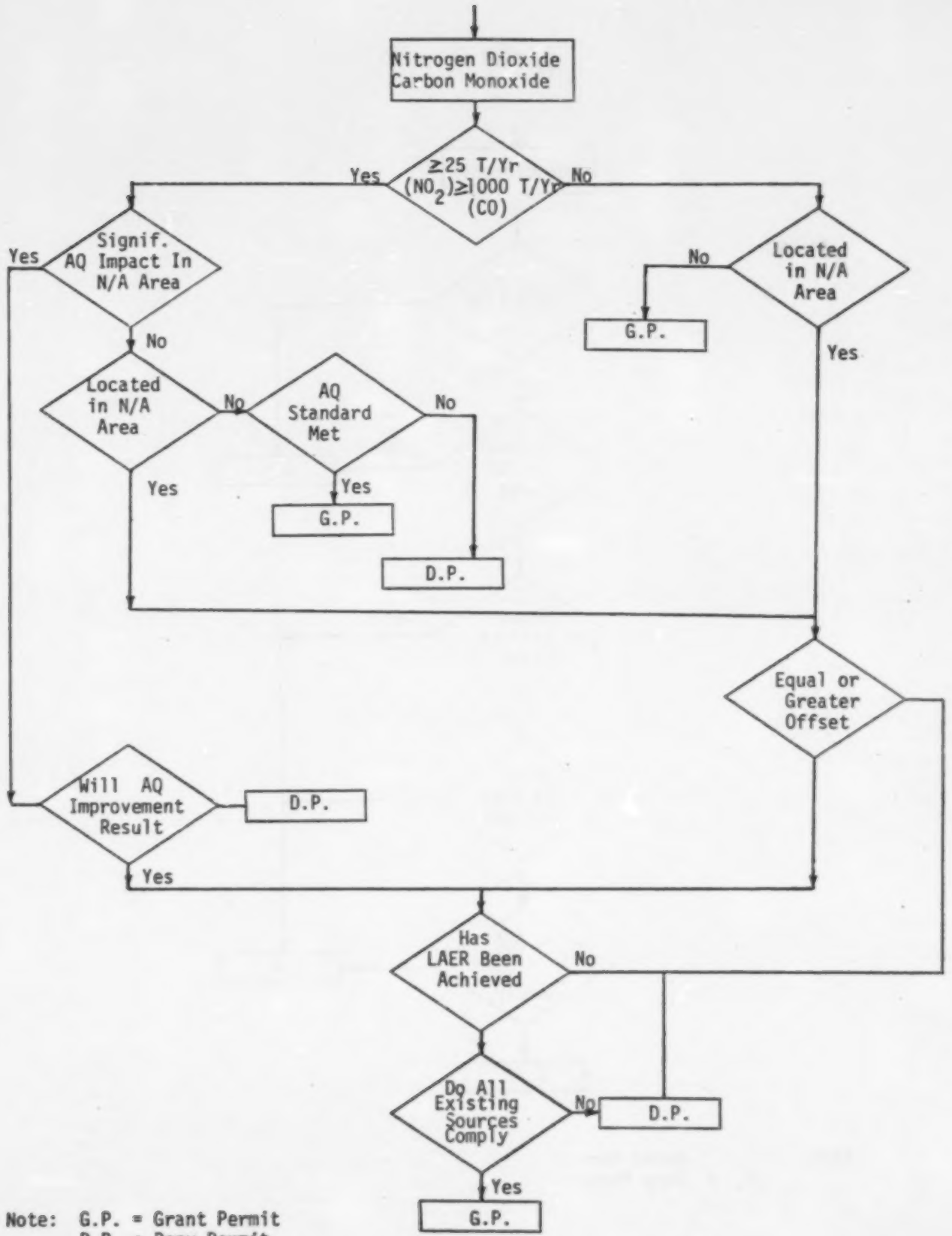


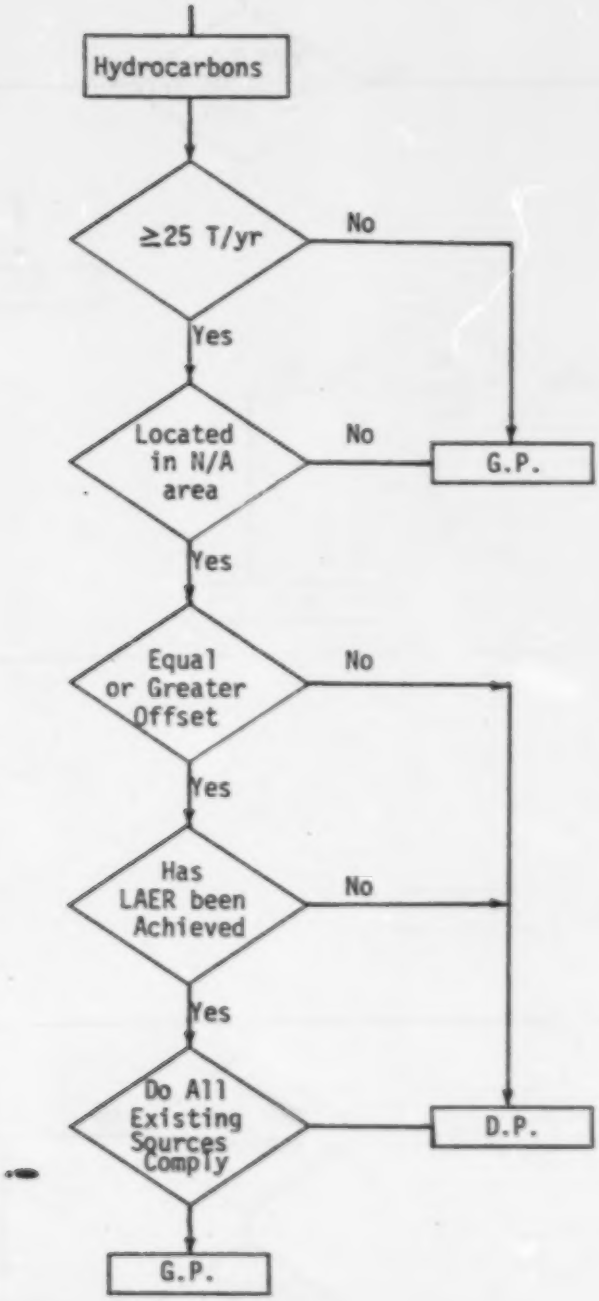
Figure 3-5 New Source Review Procedures



Note: G.P. = Grant Permit
D.P. = Deny Permit



Note: G.P. = Grant Permit
D.P. = Deny Permit



Note: G.P. = Grant Permit
D.P. = Deny Permit

Upon completion of the review, the recommendation to approve/disapprove a permit is made, and as mentioned before the final action is made through the Pollution Control Board. Since a permit can only be issued to a complying source, obtaining and keeping a valid permit is a measure of the compliance status of Illinois sources. Illinois law requires the review to be completed within 90 days. Additionally the IEPA cannot reject a permit application for lack of information or as incomplete after 30 days from initial submittal.

As noted above, the IEPA's present permit review procedures are highly defined. In May 1978, the U.S. EPA conducted an audit of IEPA's new source review activities. (This also includes permit renewals). U.S. EPA concluded that "...the well-defined procedures are closely followed and the program is expeditiously managed even though there are some regulatory deficiencies and philosophical differences with U.S. EPA policy."[4] Among the problem areas cited are:

- o Lack of evaluation of Secondary Air Quality Standards.
- o No air quality impact analysis of potential major sources.
- o Inadequate evaluation of short-term air quality standards.
- o No procedure of tracking potential emissions of sources granted construction permits but not yet operating.
- o Lack of public input prior to final issuance/denial of permit.
- o Automatic issuance of permit in 90 days of receipt of application.
- o Inadequate consideration of "fugitive" type emission sources.
- o Extensive criticism of EPA's Emission Offset Policy.

3.1.2 INITIAL COMPLIANCE

Part of this new source review process for a construction permit usually requires a stack test to assure compliance prior to facility start-up. This must be done beofre an operating permit can be granted.

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[4] Letter dated August 8, 1978 from Robert L. Duprey, Director, AHMD, U.S. EPA, Region V to Gary Melvin, Director, DAPC, IEPA.

And since operating without a permit is per se a violation of Illinois law, sources are unlikely to become operational unless in compliance.

For existing sources (which would include all sources in 1972 - 1973), to cease operation until such time as compliance is achieved is not possible. If the final compliance date for those sources had not yet passed, a final compliance schedule was part of the permit application. For sources which could not achieve compliance by the applicable date, the permit was denied. Since no permit can be legally issued to a noncomplying source, appeal to the Illinois Pollution Control Board would be futile. The source's options are: (1) amend the application and re-enter the permit process at the beginning; (2) cease operations until the necessary control equipment is installed and reapply for a permit; or, (3) apply for a variance.

The first and second options need no further elaboration. The third option, petition for a variance, is made directly to the Pollution Control Board. A variance is a grant of permission to exceed the limitations of the Environmental Protection Act and/or rules, regulations, requirements, or orders of the Pollution Control Board. The Board will grant a variance if and only if the source presents adequate proof that compliance would impose an arbitrary or unreasonable hardship. The burden of proof is on the petitioner. The Board can deny a variance only after a public hearing. The granting of a variance "excuses" a source from having a permit and authorizes a noncompliance situation. Each variance granted would contain a schedule with milestone dates leading to final compliance including the date by which the source is required to obtain any operating permit. The entire variance process is required by law to be completed within 90 days from the initial petition. Approximately 25 -35 variances are issued each year.

For a source denied a variance petition, the only recourse (aside from substantially modifying its strategy to achieve compliance and re-petitioning) is judicial review. A flow chart illustrating this permit process is in Figure 3-6.

To insure that initial compliance is achieved, especially in the cases where the engineering desk review indicates borderline or questionable compliance, the stack test group and the field operations may be enlisted to resolve the question. Stack tests are often required as a condition in a construction permit or variance to ensure compliance at startup of new sources and sources achieving delayed compliance. For these sources the IEPA stack test group will act as Illinois' witness at the test. In a few instances the stack test team conducts the testing itself. No stack tests have been conducted in Chicago by this team. Since the results of a stack test will support a permit denial or revocation in court, a source found in noncompliance based on a stack test will usually petition for a variance and propose a schedule to achieve compliance rather than risk losing in court.

The enlistment of the field operations office is done by request of the engineer reviewing the permit. The Maywood office did indicate that their engineers sometimes provide input to the permitting engineer in Springfield for a renewal without a formal request. However, there is no formal process for doing this.

During the 1972-1973 initial permitting process the workload per engineer was tremendous. For example, during the period October 1972 to April 1973 over 1,000 applications were received by IEPA each month (the peak was 2,900 in April 1973). These applications were to be reviewed by 17 to 19 engineers resulting in a minimum of 150 applications per engineer. However, during any month in 1975, no more than 500 applications were received for 13 engineers to review, a workload never exceeding 100 applications per engineer. Since all permits must be processed within 90 days of receipt and IEPA stated that no permit was ever granted by default, field engineers' priorities were directed

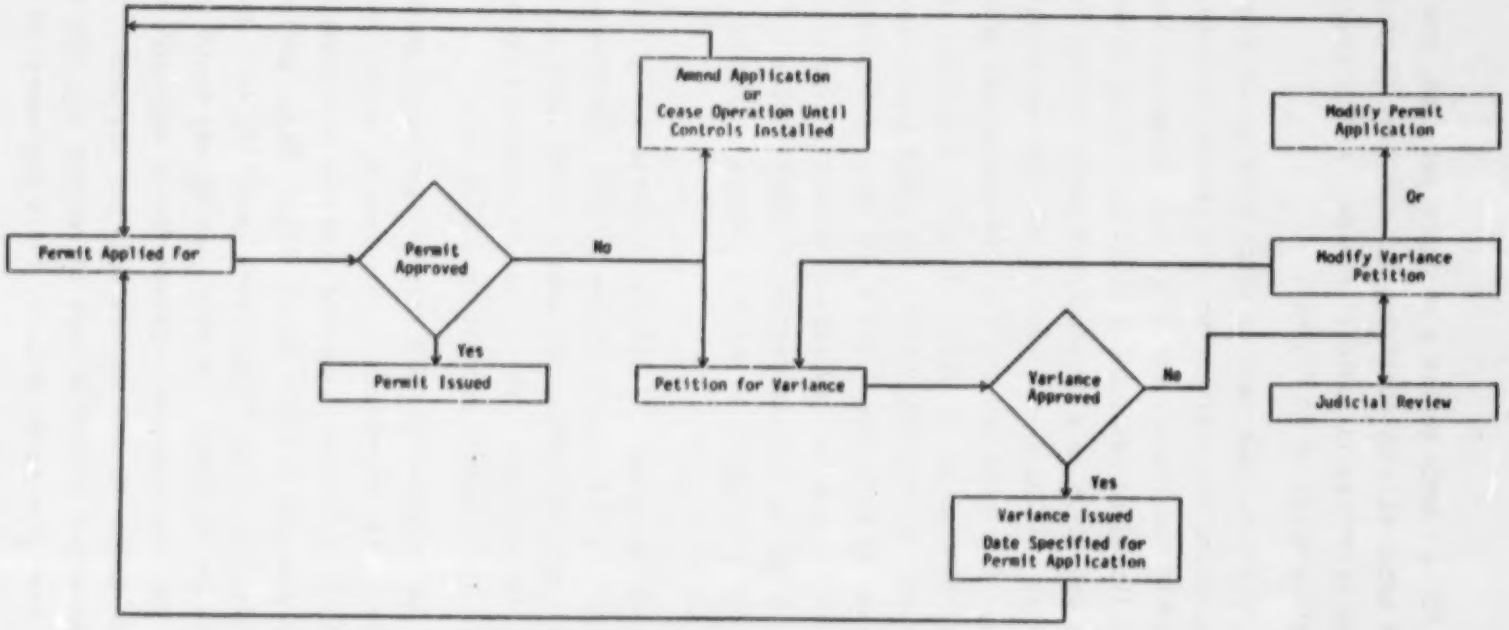

Figure 3-6. Permit Process and Appeals

at obtaining information only from sources which submitted incomplete data or none at all in their initial permit application. Actual field verification of data submitted during the initial 1972-1973 permitting process was not done on a routine basis.

The role of the enforcement programs at the Maywood office during the initial 1972-73 compliance period was independent of the State permit program. In 1972 an independent list of sources was developed from the Illinois Manufacturing Association lists, the Yellow Pages, and complaint files. Sources found by "accident" (such as newspaper articles, etc.) were also added. A program to inspect all these sources by the end of 1973 was instituted and accomplished by the IEPA. Sources found in violation were sent warning notices. Sources which did not obtain operating permits, receive variance allowing delayed compliance or simply ignored the warning notice were reinspected. The purpose of the second inspection was to gather needed data for the Notice of Violation and the filing of a suit for noncompliance. No discussions/conferences were held with the source during this period when the approach of "sue first, talk later" was employed. The preparation of the legal documentation for an enforcement suit is manpower intensive. Threatened with a suit, many sources sought and received variances from the Pollution Control Board. This rendered all the enforcement suit preparation material valueless. Moreover, sources which continued with the suits won more than 90 percent of the time. Part of this lack of enforcement success was the inadequate preparation of the IEPA case.[5] The Enforcement Division has in recent years altered this approach and is more discriminatory in its activities associated with suits. Enforcement conferences are now being employed first, before the intensive suit preparation action is begun.

3.1.3 MAINTENANCE OF COMPLIANCE

To insure continued compliance, the roles of the field operations and the enforcement programs are of central importance. The permit program utilizes the following mechanisms in order to insure continued compliance by stationary sources:

- Permit renewal process (every five years)
- Malfunction reporting
- Self monitoring requirements.

The operating permit renewal process is the same engineering analysis used in granting the initial construction permit. (See Figures 3-4 and 3-5.) However, the fact that a source did have a previous operating permit has no bearing on whether a renewal should be granted. This aspect of renewal allows for the correction of any errors made during previous review. It also provides an incentive for the source to maintain all control devices and process equipment so as not to allow increased emissions. As in the initial compliance stage, field verification of data submitted by the source is done by request of the permit engineer. Often previously submitted data are simply referenced in the renewal application.

The other two mechanisms utilized to insure maintenance of compliance are usually incorporated into the operating permit as conditions. Standard condition number 12 for operating permits specifies the malfunction reporting requirement:

> "If the referenced permit contains permission to operate in excess of applicable emission standards during malfunctions or breakdowns, the permittee shall immediately notify the Agency's regional Field Operations Section office by telegram upon occurrence of malfunction or breakdown, and comply with all directions of the regional office with respect to the incident. The permittee shall maintain records of such malfunctions or breakdowns . . . . The permittee shall not continue operation during malfunction or breakdown beyond such time as is necessary to prevent injury to persons or severe damage to equipment or to provide essential services."

[5] Discussions with IEPA Staff.

Some sources are also required to report excesive emissions data on the "Quarterly Emissions Report (Form APC-221)." This is a case by case permit condition usually in conjunction with a variance or with supplementary control systems for utilities.

As stated in the operating condition the field office is the focal point for the specific source's malfunction reports. Usually a single engineer will be responsible for a specific source. Consequently, frequent malfunction reporting would "raise a flag" to the field engineer vis-a-vis possible problems with the source. Any action taken in these instances is a case by case decision by the engineer. At a minimum, the field engineer would contact the source to discuss the problem. Taking into account such factors as the frequency and magnitude of the malfunctions, the imminent danager to the general public, and the source's efforts to correct the situation as expeditiously as possible, the field engineer would recommend future action. Such furtner action could be a request to the Pollution Control Board to revoke the operating permit. A simultaneous enforcement suit can also be pursued. Such enforcement activity has resulted in permit revokation procedures.

The IEPA does have the authority to require self-monitoring devices on stationary sources. Except in those cases where the Federal Regulations require them for specific source categories under the New Source Performance Standards, Illinois does not apply this authority. IEPA's experience has been that these types of records do not support a violation in court and are of little enforcement value. However, this approach is considered to have future value because the nonacceptance of self-monitoring records is based on lack of confidence in the presently available hardware. As technology in the continuous monitoring field improves, IEPA intends to require these devices.

The public affairs group in the Director's office is periodically utilized to aid in obtaining/maintaining compliance. Items from the Board's newsletter are printed by local newspapers. An action against a source noting noncompliance status can generate negative public

opinion which can pressure a source to comply. The effect of this pressure can be measured only by the subjective opinion of the APC personnel involved at the time. The agency has used this approach and does consider this type of public relations useful in obtaining the end result of compliance.

3.2 CHICAGO DEPARTMENT OF ENVIRONMENTAL CONTROL

As previously indicated, CDEC is divided into five major technical departments (excluding Administration) which are: Technical Services, Enforcement, Engineering, Inspectional Services, and Mobile Services.

Overall, the CDEC tends to function independently of the IEPA in most program areas geared towards enforcement/compliance. The annual interagency agreement between the IEPA and the CDEC technically limits the focus of CDEC actions to facilities less than 100 tons per year (actual) emissions. However, the CDEC also inspects and initiates enforcement-related activities against larger sources when the occasion arises as a result of complaints and/or mobile inspector reports. Described below is the interaction of the interagency departments during each phase of the enforcement/compliance process.

3.2.1 PRE-PERMIT PHASE

The pre-permit phase primarily consists of two major functions, i.e., the identification of new sources (post-1970). Prior to 1970, the CDEC began compiling its master list of sources. The primary sources of information for this list were the records of the City's tax and building permit systems. Additional sources were added to the list by various other mechanisms such as the investigation of citizen's complaints, aerial camera surveillance for visible emissions, and mobile inspections. Whenever a source was determined to be a potential source of air pollution, it was entered onto the central computer listing and reviewed for possible noncompliance. The CDEC staff indicated that this system of data accumulation identified over 95 percent of all potential air pollution sources within the city

limits (100 percent of all sources greater than 100 tons per year) by 1972.[6] The computer system is updated once per year so as to maintain an accurate list of sources within the City. This update is accomplished by entering all of the data accumulated during the annual source inspection into the computer system.

Potential new facility construction is primarily identified by the City's building permit system. CDEC performs a cursory engineering review for each application for a building permit as it goes through the building permit department. This initial review is performed by one of the senior level engineers whose primary responsibility is to flag potential new air pollution sources. The CDEC checks and approves all nonpotential air pollution sources and reroutes all potential sources (flagged) to its Engineering Services Department for a more detailed engineering review. Before a building permit is issued to the source by the city's building department the CDEC engineer must sign the application for the building permit, with respect to whether or not it is a potential source of air pollution. The CDEC permit is always issued after the building permit has been granted. If the source has been recognized as a potential air pollution source, a field inspsection team is assigned to the new construction and examines progress at the site during construction. These inspectors relay this information to the Engineering Services Department for review. A Certificate of Operation is only issued after the inspector and engineers agree that all requirements of the construction installation permit have been met. Once the Certificate of Operation has been granted the facility is handled in the same manner as any other existing source (i.e., compliance requirements are same as those required for existing sources). Overall the CDEC conducts a rather extensive preconstruction review based upon the issuance of city building permits. However, the permit review appears to be primarily "emission standards" related and does not typically include an air quality impact assessment employing computer dispersion models.

[6]Verbal comments by Mr. Ted Kason, Deputy Commissioner, CDEC

The CDEC feels this is a very successful method of operation since anyone doing construction work must obtain a city permit. In effect, all of the other city inspectors such as electrical, structural, or plumbing help to locate unauthorized construction. This method also has benefits to the permit applicant since one visit to the Building Department will give contact for all permits required. The CDEC grants approximately 4,000 permits per year (approximately 75 percent fuel burning permits). Figure 3-7 depicts the pre-permit phase in a flow schematic.

3.2.2 PERMIT PHASE

There are two types of permits issued by the CDEC - an installation permit and an annual Certificate of Operation (operating permit). This section will study the annual Certificate of Operation and the following section, Construction Phase, will review the installation permit system.

An annual Certificate of Operations is issued in one of the two following circumstances: (1) Upon completion of any work for which an installation permit was issued and, if upon inspection the source is found to operate within all applicable regulations; and (2) upon completion of the annual inspection and verification that the equipment on the premises is being managed and operated so that no particulate or other matter will be emitted in excess of any applicable regulation. Each Certificate of Operation is effective during the calendar year the source is inspected or until the next year's annual inspection. Theoretically a source may not be inspected for a period of 23 months (i.e., January 1977 to December 1978). However, this situation usually does not exist since all sources within a certain area (square mile) are inspected during the same month of each year. The annual Certificate of Operation must be posted in a conspicuous place upon receipt by the facility. One Certificate of Operation is issued for each operation that is a potential air pollution source.

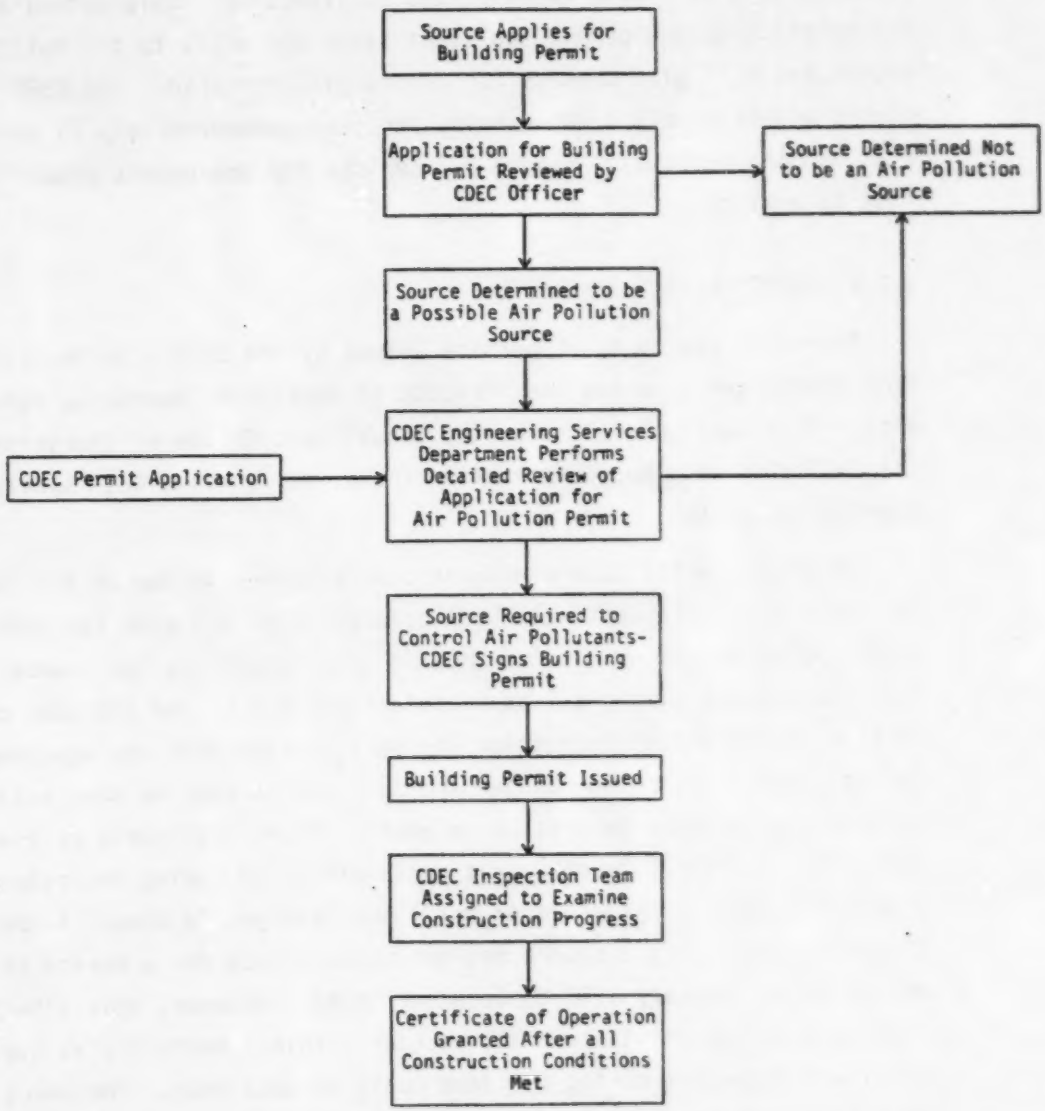
Source Applies for Building Permit
Application for Building Permit Reviewed by CDEC Officer
Source Determined Not to be an Air Pollution Source
Source Determined to be a Possible Air Pollution Source
CDEC Permit Application
CDEC Engineering Services Department Performs Detailed Review of Application for Air Pollution Permit
Source Required to Control Air Pollutants-CDEC Signs Building Permit
Building Permit Issued
CDEC Inspection Team Assigned to Examine Construction Progress
Certificate of Operation Granted After all Construction Conditions Met

Figure 3-7. Pre-Permit Phase

As an enforcement tool CDEC has initiated procedures to revoke Certificates of Operation by order of the Commissioner. In these cases, the source files for a hearing with the Appeals Board. This Board then attempts to negotiate some solution with the operator. They have generally met with success on this point. The remedy agreed upon is then issued as an order by the Appeals Board.

As previously stated, the annual inspections of each facility occurs approximately during the same month of each year, thereby assuring a minimum of one inspection of each facility per year. Each inspection is conducted on an unannounced basis. Data assembled by the inspectors are forwarded to the Engineering Services Department which reviews the new data. These reviews are usually done in less than one week. A visible emission review is also conducted whenever an inspector deems one necessary. If the source is found to be in violation of either visible emission or weight emission standards, the inspectors have the authority to issue a ticket. The Engineering Services Department enters all new data into the CDEC computer system and makes engineering calculations to ascertain the compliance status of the source. At this time the source is also reviewed with respect to malfunction reporting. If malfunction reporting occurs too frequently, the Certificate of Operation may be disapproved by the engineering staff or a requirement of proof of maintenance may be requested from the source,although such requests are infrequent as other enforcement methods are favored.

Annual inspections are made on about 35,000 pieces of fuel burning equipment, about 3,000 incinerators, and roughly 3,000 industrial plants.

Equipment	Personnel	Division
Fuel Burning Incinerators	Combustion Engineers Environmental Control Inspectors II to IV	Enforcement
Utility Fuel Burning Large Incinerators Including Municipal	Environmental Control Engineers I to V	Engineering
Industrial Process	Environmental Control Engineers I to V	Engineering

All fuel and refuse burning equipment with a rating of 228,000 Btu/hr or larger is inspected annually by the enforcement division's inspections services combustion engineers. Large and complex fuel and solid waste burning facilities such as the electrical utility plants or the municipal incinerators are inspected by graduate engineers from the engineering division. All industrial plants are also inspected by graduate engineers from the engineering division.

Plants that do not qualify for a Certificate of Operation are sent to the air control program section in engineering for another evaluation. Those companies that do not qualify for an annual Certificate of Operation are started on a control program. An office hearing is held and compliance is requested by the hearing officer. After this hearing the company sends an outline of their proposed compliance program to the Commissioner. If the program exceeds 90 days the program is referred to the Appeal Board. The Appeal Board then sets a hearing date at which time the company is represented by counsel. The Board can then grant a variance to the source for periods greater than 90 days or request progress reports every 90 days at another hearing.

If a Certificate of Operation is denied due to lack of pollution control equipment, a "grace period" may be allowed by the Commissioner or the Appeal Board. This period may be of any duration deemed appropriate by the Commissioner (or Board) i.e., the necessary time to install control equipment. During this period the source is not subject to any fines or penalties associated with its noncompliance status. However, if a facility willingly does not comply with the stated provisions of the period of grace, it is subject to all applicable fines and penalties dating from the beginning of the period of grace. If a request for a period of grace is denied by the Commissioner, the facility may appeal the decision to the Appeal Board. The Appeal Board decision may only be overturned by judicial proceeding in City Court. Whenever a period of grace is granted by either the Commissioner

or the Appeal Board, the source is subject to review any time the Commissioner or Board requires. This review period usually occurs once every three months. If no period of grace is granted by any authority, the penalty of fine levied by the originally issued ticket remains outstanding. (See Figure 3-8 for a flow diagram of the permit phase).

The Certificate of Operation is subject to a fee ranging from $5.00 to $50.00 for each unit. Each operation's fee is defined in the Chicago Environmental Control Ordinance with size of the operation being the single most evident determing factor. The fee includes the cost of inspection and subsequent review of engineering data. All fess are paid to the Commissioner of the CDEC.

3.2.3 CONSTRUCTION PHASE

As stated in Section 3.2.1, new sources are primarily identified by the City's building permit system. Once a building permit has been issued by the City, the CDEC requires the application of an installation permit. The permit application requires the submittal of all plans and specifications of the fuel-burning, refuse burning, compactor, combustion and process equipment being constructed at the facility. After these data are reviewed by the Engineering Department a decision is made by the Commission concerning approval/disapproval. An average of 2400 such permits are issued per year. If the permit is disapproved, the decision may be appealed to the Appeal Board.

After the installation permit is granted, an inspection team is assigned to the construction site. This team confirms the installation of all equipment called for in the approved installation permit. If the inspectors cite any deficiencies or discrepancies from the installation permit, the permit may be revoked by the Commissioner.

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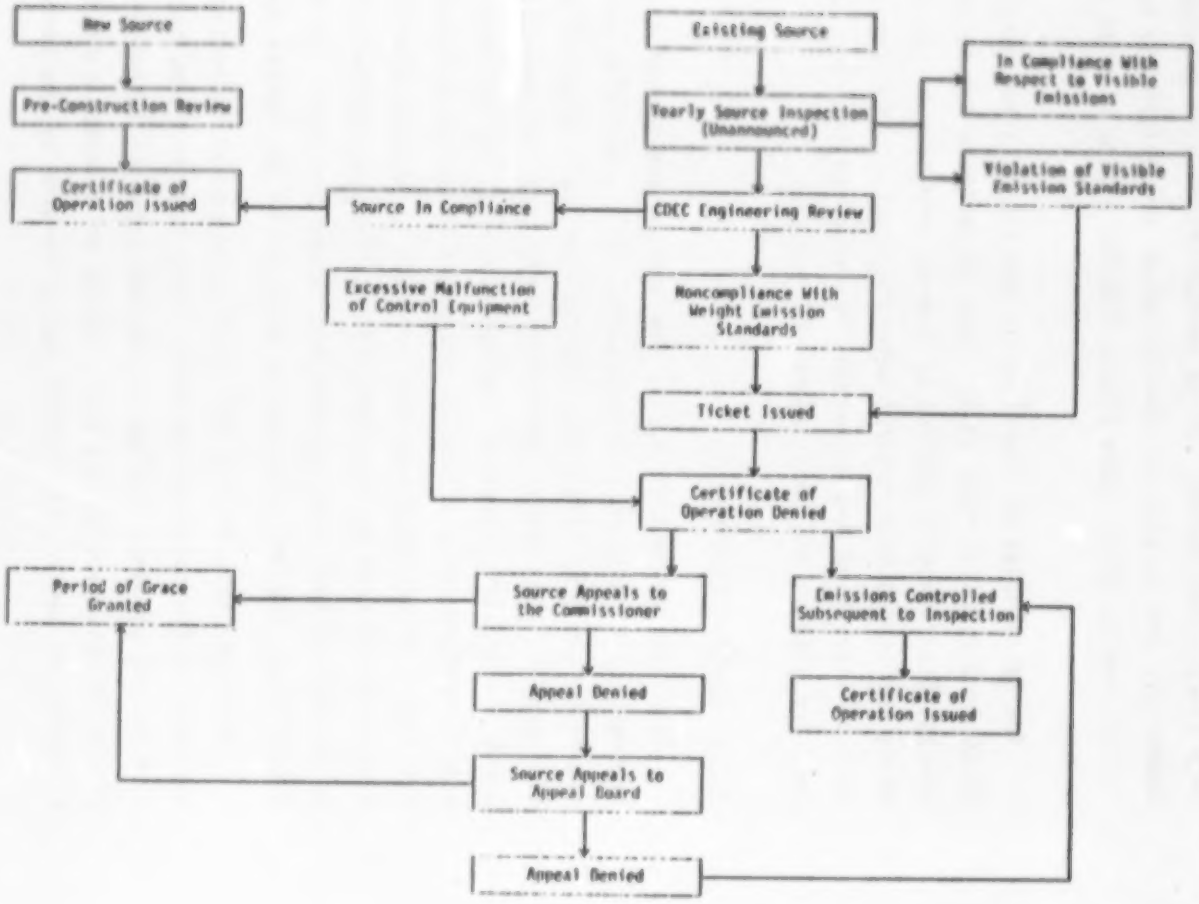

Figure 3-8. Permit Phase

Upon the completion of any work for which an installation permit was issued, and if upon inspection it is found that such work conforms with the approved plans and specifications, the Commissioner will issue a Certificate of Operation.

If an installation permit for which an application is required is not produced prior to the start of any construction, or, if any work for which an installation permit was issued fails to comply with the approved plans and specifications, an administrative hearing is held to determine the reason for noncompliance. If this hearing proves inconclusive the Commissioner has the authority to stop all work and seal the installation. Once a facility has been sealed an inspector visits the source daily until the seal order is lifted. Figure 3-9 summarized the structure of the construction phase.

3.2.4 COMPLIANCE PHASE

The compliance phase is the major enforcement-related function of the CDEC. Tne CDEC incorporates all of the following elements into a program designed to maintain compliance by all stationary sources:

- o Response to citizen complaints
- o Issuance of tickets by mobile inspectors
- o Malfunction reporting
- o Stack testing
- o Sealing powers

The CDEC maintains a fleet of approximately 25 mobile inspector cars, whose main function is the response to citizen complaints concerning air pollution. The roving inspectors also make routine rounds around the City looking for possible violations of the City ordinances. In 1969, citizen complains approached 13,000 per year. This figure has been reduced to a projected 1978 complaint rate of approximately 2,500 per year. Of the 2,500 complaints, noise complaints account for 40 percent, and odors account for another 20 percent. Once a complaint is received by the CDEC, a mobile inspector is dis-

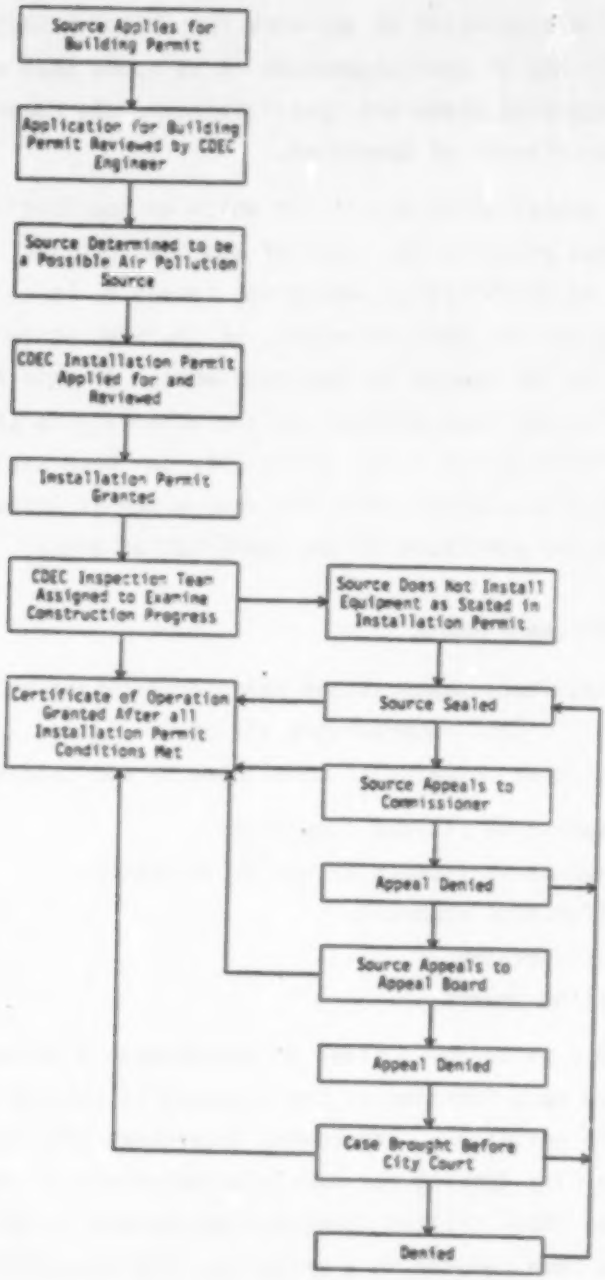
Source Applies for Building Permit
Application for Building Permit Reviewed by CDEC Engineer
Source Determined to be a Possible Air Pollution Source
CDEC Installation Permit Applied for and Reviewed
Installation Permit Granted
CDEC Inspection Team Assigned to Examine Construction Progress
Source Does Not Install Equipment as Stated in Installation Permit
Certificate of Operation Granted After all Installation Permit Conditions Met
Source Sealed
Source Appeals to Commissioner
Appeal Denied
Source Appeals to Appeal Board
Appeal Denied
Case Brought Before City Court
Denied

Figure 3-9. Construction Phase

patched to the site via radio communication. The average response time for complaints by the inspectors in 1977 was 51 minutes per call. The average response time in 1978 has been reduced to 36.2 minutes per call due to better placement of inspectors, the use of refined geographic inspection zones, and the transfer of phone operators to the central radio dispatch room. When the inspector arrives at the site, a complete source inspection is conducted. If the source is in violation the inspector has the power to issue a ticket for noncompliance with the applicable regulations.

Tickets may be issued by mobile inspectors investigating a citizen's complaint or by inspectors identifying violations on their own. Tickets issued carry the following fines by City Ordinance:

First Offense - $100 - $300
Second Offense - $300 - $500
Third Offense - $500

No fines over $500.00 have been levied to any violating source.

Repeated offenses in excess of three within a 180-day period may also be punishable as a misdemeanor by incarceration in the county jail for a term not to exceed six months. No incarcerations have occurred concerning air pollution violations as the CDEC tends to focus its compliance efforts upon negotiation with the facilities. If any person has been notified of three or more violations within any consecutive 12-month period, the Commissioner has the authority to call upon the source owner/operator to appear for a formal hearing within 20 days and to state at that time why the equipment causing the pollution should not be sealed. If the source does not appear at the hearing or if the Commissioner decides that the source has not applied effective corrective measures, he may enter an order revoking any Certificate of Operation and direct that the process be sealed by an inspector. The CDEC has used sealing powers successfully in over a dozen cases since 1971.

If a source feels it does not deserve an issued ticket, it may contest the ticket in circuit court. This court is very similar to traffic court in that all cases are decided by the circuit court judge. If a source owner/operator wishes, he may request a trial by jury, but this has been done only once in the history of the CDEC, due to the possible poor publicity the facility may receive from such a proceeding.

Continuous monitoring is a compliance device which has not been used extensively by the CDEC. Although the CDEC has the authority to require continuous monitoring for opacity, the agency does not use it since the court does not accept smoke chart readings as conclusive evidence.

As shown in Figure 3-10, the primary compliance tool utilized by the CDEC is actual surveillance consisting of roving inspectors, unannounced annual inspections, and other inspection activities. Approximately half of the CDEC's $3,000,000 budget is devoted to surveillance of some kind.

The annual inspection is a "quasi planned" site visit. During the month that the Certificates of Operation for a source are scheduled for renewal, a field inspector will visit the facility. The visit is normally unannounced. The inspector will have as a guide a computer listing of all sources of emission at the specific facility. He will inspect the sources, gather emission inventory data and note discontinued and/or new operations.

The annual plant survey section of engineering may reject certain sources an annual Certificate of Operation. These sources are transferred to the air control programs section for reevaluation. Sources which fail to meet the requirements of the city ordinances are referred to a hearing officer. The hearing officer then presides to hear the sources' plans and timetable to solve these problems. Usually an agreement is reached between the source and the hearing officer as to the reasonableness of the program. The control program is then formal-

ly submitted to the Commissioner for approval. All programs that exceed 90 days in length must also file a petition with the Appeal Board. Once the Appeal Board approves of a control program, the Board will review the progress of the program every 90 days.

In addition to industrial sources, the enforcement division inspection services section annually reinspects all existing fuel and refuse burning equipment in accordance with the ordinance. A Certificate of Operation is issued to all sources which operate in compliance and show good combustion efficiency.

Spot inspections may result from an observed violation of the "roving patrols" utilized by CDEC. The mobile inspectors are also responsible for the followup of citizen's complaints. The complaint reporting system is well developed at CDEC. A telephone complaint is received and time-stamped in the downtown offices. The nearest available field inspector is assigned the complaint. The inspector notes the time of arrival at the source and observes the stack. If need be, he then writes the ticket. All events are time recorded and included in his report of his inspection. This extensive use of timing each step has enabled CDEC to be successful in air pollution court. The roving inspectors also answer citizens' complaints in regard to excessive motor vehicle emissions, leaf burning, and assorted other violations. The same procedure is utilized for recording and investigating malfunction reports. In practice the system works well and provides for expeditious response and evaluation of malfunctions.

One additional program for maintenance of compliance is the use of stack tests. CDEC has the authority to require stack tests at other times too. These tests are often required by the construction permit. A member of the CDEC's two stack test teams will represent CDEC at these tests. The stack test team is also called upon to perform the tests on a case-by-case basis. Emission sources of other City department/agencies are also required to do the stack tests; however CDEC's stack test team often performs the test.

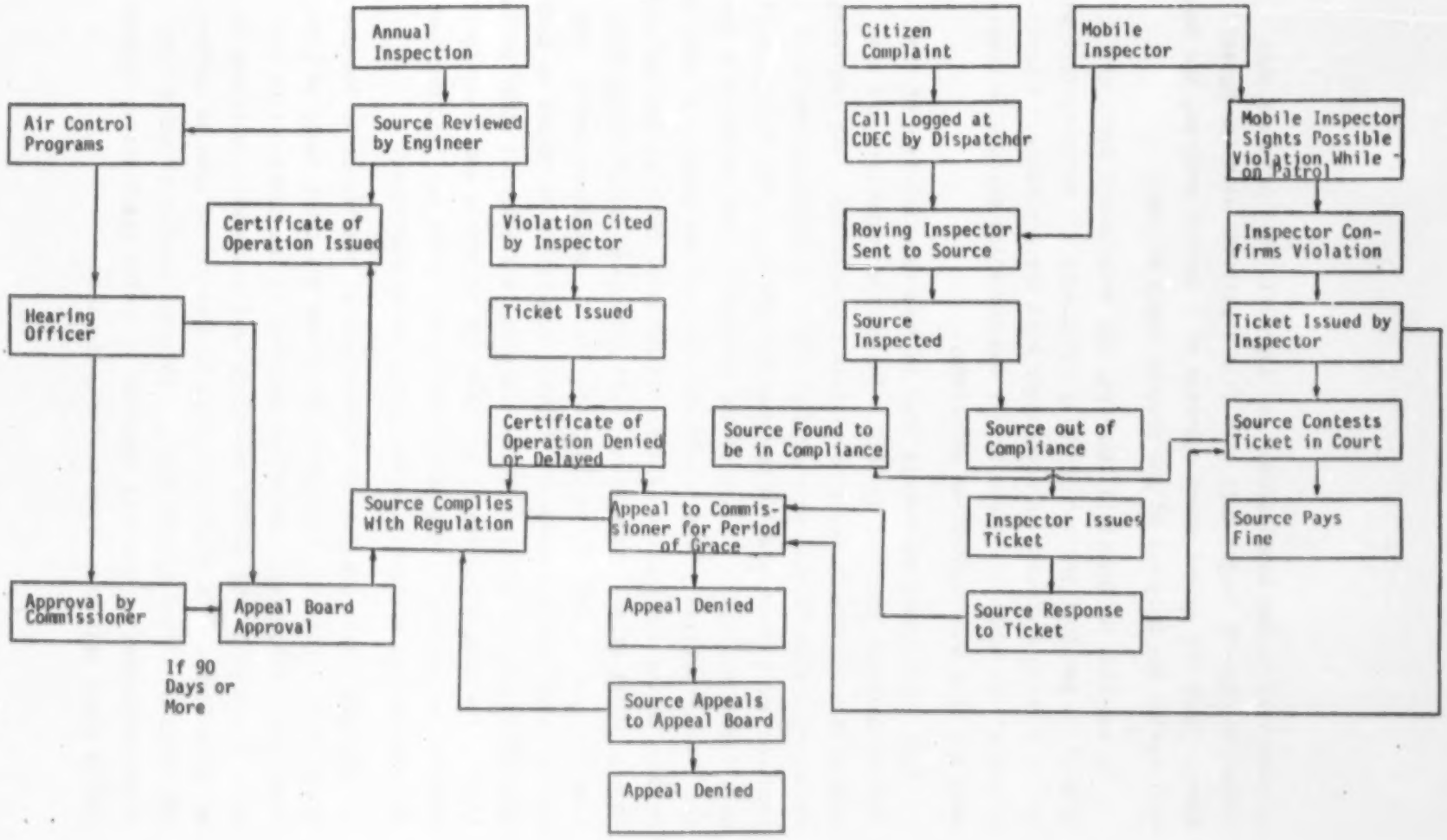

Figure 3-10 Compliance Phase

4.0 CASE STUDIES

In order to illustrate the operation of the regulatory processes utilized by IEPA and CDEC, this section presents case studies applicable to each agency. Each case study will present the step-by-step process the respective agency pursued in seeking to bring the source in compliance. The example for IEPA deals with a food industry source and the case for CDEC is a sulfuric acid plant. The action codes are based upon the pre-permit, permit, construction and compliance phases, and are highlighted in Table 4-1.

4.1 IEPA CASE STUDY: FOOD INDUSTRY

Type of Action		
A	10-31-72	Air Pollution Episode Action Plan submitted for boilers.
A-1 D-1	12-6-72	IEPA Region II Field Office Services (FOS) conducted plant inspection. Found boilers in violation of Rule 3-3.112.
B-2	12-7-72	Operating permit issued by IEPA.
D-8	6-1-73	In violation of Rule 103(b)(2) with regard to boilers 2, 3, and 4.
D-1	1-29-74	An update investigation and revealed violation of Rule 3-3.112.
D-8	2-15-74	IEPA sent letter informing source that they are out of compliance with Rule 103(b) - no operating permit; and Rule 3-3.112 - Particulate Emissions
	3-11-74	Source sent letter to IEPA insuring them that they are in the process of securing the necessary forms for an operating permit and that they are presently conducting engineering studies concerning this matter.

Table 4-1. IEPA/CDEC CASE STUDY LEGEND

TYPE OF ACTION	
A	Pre-Permit Phase
A-1	Identify and classify existing sources pre-1972
A-2	Identify and classify new sources post-1972
B	Permit Phase
B-1	Review
B-2	Approval/denial
B-3	Appeal
C	Construction Phase
C-1	Inspection
C-2	Compliance Test
C-3	Permit to Construct
D	Compliance Phase
D-1	Scheduled inspection
D-2	Public complaint
D-3	Malfunction reporting
D-4	Enforcement action (ticketing, fines, sealing, etc.)
D-5	Variances
D-6	Stack test
D-7	Monitoring
D-8	Notice of Violation

D-8	10-24-74	IEPA sent formal notice to source concerning the lack of an operating permit for their boilers.
B-2	11-21-74	Operating permit issued by IEPA for peanut roasting operations.
	4-11-75	U.S. EPA requested information from source by sending a Section 114 letter.
D-8	5-30-75	Source boiler in violation of Rule 203(g)(1)(A)
D-5	6-9-75	Source petitioned for variance concerning boilers. (a) Rule 203(g)(1)(A) for the two coal fired boilers until December 31, 1976. (b) Rule 103(b)(2) for the two coal fired boilers until December 31, 1976; for the gas/oil fired boiler until Nov. 15, 1975. (c) Rule 104 for the two coal fired boilers until December 31, 1976.
D-5	6-13-75	IEPA requested more information from source concerning the variance request.
D-5 B-2	6-15-75	Variance information was sent to IEPA Region II field operation service office for review by June 26, 1975.
	7-9-75	Date by which IEPA must file recommendation concerning variance requested on June 9, 1975 (30 days).
D-5	8-12-75	Source sent an amended request for variance to IEPA.
D-5 B-2	8-14-75	IEPA sent amended variance information to their Region II Field Operation Service (FOS) office for review by August 29, 1975.
	9-11-75	Date by which IEPA must file recommendation concerning amended variance requested on August 12, 1975 (30 days).
D-5 B-2	9-22-75	Pollution Control Board denied variance.

B-1	10-6-75	Source sent application for a permit to operate their Foster Wheeler Boiler to IEPA. Source also applied for permit to operate for storage of petroleum products with less than 40,000 gallons in any one tank and less than 40,000 gallon/day total throughput.
B-2	11-14-75	Permit to operate Foster Wheeler Boiler and storage vessels approved by IEPA with two special conditions. (a) The applicant shall not keep, store, or utilize any: (1) distillate fuel oil with a sulfur content greater than the larger of the following two values: (a) 0.28 weight percent; (b) that weight percent given by the formula: Weight percent sulfur = (0.000015) maximum fuel content. (2) residual fuel oil with a sulfur content greater than the larger of the following two values: (a) 0.87 weight percent; or (b) that weight percent sulfur given by the formula: Weight percent sulfur = (0.00005). (b) The agency shall be allowed to sample all fuel oil stored at the location.
C-3	9-28-76	Source applied to IEPA for permit to construct Zurn Boiler.
	4-25-77	U.S. EPA sent Section 114 letter to source.
B-1	5-11-77	Source sent IEPA application for permit to operate Zurn Boiler.
	5-26-77	Source sent IEPA annual emission report.
B-2	6-29-77	IEPA granted permit to operate Zurn Boiler expiration date for boiler permit is June 28, 1981.
	6-29-77	Source in compliance.

4.2 CDEC CASE STUDY: SULFURIC ACID PLANT:

Certificate of Operation: 10-27-69 (CONDITIONAL)
Process: Mfg. of Sulfuric Acid
Emissions: Sulfur

Controls:

4-13-70 Appeal Board hearing:	Appeal denied-order from W.J.H. Murphy stands.
4-24-70 Office file:	File turned over to Field Services.
5-25-70 Office file:	"20 day-show cause" hearing.
6-1-70 Office file:	Engineer to study proposal.
9-21-70 Eng. report:	Installation Permit delivered for ammonia scrubber. They will contact S. Marco for date to do Annual Survey
11-30-70 Engr. report:	Annual Survey completed. Ammonia scrubber slated for completion 1/1/71
12-30-70 Engr. report:	No. 1 & 2 units reduced operation. Mr. Partin surprised that they were to appear at Connella's hearing 1/26/71.
12-6-71 Enforcement hearing:	Continued hearing from 5/25/70 and present testimony of "show-cause".
2-10-71 Engr. report:	Discussed plans of trip with Mr. Partin for control equipment.
2-18-71 Office file:	Attended hearing and agreed to evaluate the proposed Wellman-Lord tail gas scrubber control program.
2-25-71 Engr. report:	Advised that seal order is being prepared to be delivered 3/11/71. Request for evaluation of proposed scrubber be sent, Go letter to be issued.
3-4-71 Office file:	"Go" letter requested received.
3-5-71 Office file:	"Go" letter sent this date.
3-10-71 Office file:	Seal order of this plant has been postponed until Commissioner gives go ahead.
4-2-71 Office file:	Petition for Appeal hearing.
6-22-71 Appeal board hearing:	The application for P of G till 8/1/72 granted.
7-29-71 Engr. report:	General arrangement of flow drawings completed, detailed Engg. drawings being prepared and possibly completed in 30 days.
8-16-71 Office file:	Order of Appeal Board thru 8/1/72, rehear 1/14/72.
8-23-71 Engr. report:	Meeting with manufacturer of equipment on 8-24-71.
8-24-71 Engr. report:	Received general flow diagram on SO_2 recovery plant.

9-3-71 Engr. report:	New personnel changes.
9-28-71 Engr. report:	Annual Survey completed-20 Basics, 8 Controls.
10-12-71 Engr. report:	Original inspection of I.P.
10-20-71 Engr. report:	Delivered I.P.
11-8-71 Engr. report:	Site preparation.
12-3-71 Engr. report:	Process designs on schedule.
12-27-71 Engr. report:	Discussed upcoming Apl. Brd. hearing (1/14/72).
1-6-72 Office file:	Ill. EPA wants I.P. forms completed.
1-5-72 Engr. report: Office report:	I.P. forms submitted and Plan Examination to render decision by 1/12/72. I.P. letter of transmittal to Bldg. Dept.
1-13-72 Office file:	Progress report, on schedule b/p of general arrangement, etc.
1-12-72 Engr. report:	Letter of transmittal delivered and design engg. on schedule.
1-14-72 Apl Brd. hearing:	Good progress-rehear 6/16/72
1-24-72 Phone call:	Re: Steam whistle union.
2-4-72 Office file:	Plant visit scheduled for 2/9/72
2-7-72 Engr. report:	Variance petition to HWP.
2-9-72 Engr. report:	Will apply to Bldg. Dept. for permits week of 2/14/72.
2-15-72 Office file:	Signed order of Apl Brd., rehear 6/16/71.
2-17-72 Engr. report:	Toured plt. and read noise level of steam whistle, Caccavari agrees that variance could be granted for steam whistle he will write recommendation to HWP.
2-23-72 Pnone call:	Plt. visit set for 3/1/72
2-24-72 Phone call:	Bldg. Dept. permit to be applied for on 2/28/72.
2-28-72 Office file:	I.P.'s typed.
3-1-72 Engr. report:	Bldg. Dept. permit issued for SO_2 recovery plant.
3-9-72 Office file:	HWP P of G to 6/30/72 for steam whistle.
3-24-72 Engr. report:	Delivered I.P.'s
4-6-72 Engr. report:	Site preparation underway for W.P.G. equipment.
4-21-72 Engr. report:	Due to weather site preparation delayed, but fabrication of equipment on schedule.
5-4-72 Engr. report:	Construction site flooded, foundation work delayed.
5-12-72 Engr. report:	Status report-Control equipment in storage.
5-23-72 Engr. report:	Foundation work underway.
6-2-72 Engr. report:	Plant visit 6/7/72

6-7-72 Engr. report:	Concrete to begin being poured 6/8/72.
6-16-72 Engr. report:	Absorber foundation poured.
6-28-72 Engr. report:	Installing demister.
6-30-72 Office file:	Suspension of Apl. Brd. order for Episode Action.
7-19-72 Engr. report:	Balance of foundation poured-demister 80% installed.
7-24-72 Engr. report:	Progress report to Appeal Board.
7-25-72 Apl Brd. hearing:	Rehear 10/18/72 at 12:00 noon
8-3-72 Engr. report:	Abosrber to be installed week of 8/7/72
8-17-72 Phone call:	Absorber to be erected 8/22/72.
8-24-72 Engr. report:	Erection of absorber and primary and secondary condensors completed.
8-30-72 Engr. report:	All major components installed, progress satisfactory
9-6-72 Office file:	Signed Order of Appeal Board-Rehear 10/18/72.
9-7-72 Engr. report:	Installation work progressing satisfactory-electrical work 90% complete.
9-14-72 Engr. report:	Work progressing satisfactory.
9-26-72 Engr. report:	Expect delay from Oct. 15 start up date.
10-11-72 Engr. report:	Approx 2 wks. behind-tie in's by 10/18/72 and 11/21/72.
10-17-72 Engr. report:	Tower No. 4 into mist eliminator, certification testing on or before 11/1/72.
10-18-72 Apl Brd. hearing	Rehead 1/23/73 at 11:30 a.m. for possible final report.
11-6-72 Engr. report:	Tentative start up of absorber system week of 11/13/72.
11-8-72 Office file:	Signed Order of Appeal Board, extension granted till 1/23/73.
11-22-72 Engr. report:	SO_2 recovery plant on stream.
11-22-72 Office file:	Letter requesting compliance testing.
11-22-72 Office file:	Work order sent to G. Kimura
11-28-72 Engr. report:	Annual survey completed-30 basics and 8 controls. Testing of SO_2 recovery plant postponed till wk. of 12/11/72, due to failure of caustic pump and various lines freezing.
12-7-72 Phone call:	Tests postponed, weather conditions have caused pipes to freeze.
12-11-72 Engr. report:	Possible re-test 12/14-15/72.
12-19-72 Engr. report:	Stack test performed.
12-27-72 Office file:	Stack test report from Kimura.
1-2-72 Engr. report:	Delivered C.O.D.'s for Wellman Lord recovery plant.

1-18-73 Engr. report:	Delivered annual C.O.O. #P2-51617. State EPA testing Wellman Lord system.
1-23-73 Apl. Brd.:	Matter concluded and dismissed.
2-27-73 Office file:	Appeal board order, program completed.
8-6-74 Office file:	Meeting with HWP SO_2 recovery plant is to be shutdown for repairs.
8-9-74 Office file:	Request for P of G till 10/5/74.
8-16-74 Office file:	HWP granted P of G till 10/5/74.
9-4-74 Phone call:	Talked with Malthee; recovery plant down, repairs underway
9-11-74 Engr. report:	Stripping interior of absorber of brick lining and flues. Sand blasting to begin next week.
9-30-74 Engr. report:	Repair to SO_2 recovery plant to be completed by 10/5/74 on time.
10-4-74 Engr. report:	Repairs completed SO_2, recovery plant on stream. RETURN TO FIELD ENGINEERING.
2-7-77 Office file:	Meeting with HWP. Main blower on SO_2 recovery plant went out on 2/3/77. Back on line 2/6/77. TTK give approval to start up system without controls.
3-2-77 Office file:	Time schedule for additional repair to controls.
3-10-77 Office file:	HWP grant P of G from 4/1/77 to 5/15/77.

The same approach is utilized for recording malfunction reports.

The grant role of CDEC is small (less than 100 tons per year) sources and the ticketing procedure is highly successful. The fines associated with each ticket are substantive for small sources. CDEC has investigated and has ticketed larger sources but does not share its data with IEPA or U.S. EPA.

5.0 CONCLUSION

The review of the regulatory programs for both the CDEC and the IEPA have highlighted various approaches towards achieving and maintaining stationary source compliance. The study has also uncovered certain trends within the agencies regarding enforcement/compliance mechanisms, which will require further study in the following phases of the project.

The IEPA tends to focus upon the implementation of its permit system. This system employs rather sophisticated "pencil-engineering" techniques involving, in many instances, the application of computer simulation dispersion modeling for the application of construction permits. In addition, the State system utilizes a renewable, five year operating permit which is coupled with an engineering review for the assurance of continued applicability. This approach to ensuring facility compliance can be thorough, but also resource intensive and costly. This situation was characterized by the 1972-73 permit load which heavily burdened the IEPA permit section. At that time, the permit section was operating under a total manpower of 33, (including 16-17 individuals for permit analysis; nine to ten individuals for permit analysis; and four to five individuals for overall review). Even then, it is somewhat unclear as to how thorough a review was conducted of some applicants. As indicated above, the IEPA permit system also contains a five year renewable operating permit. This concept is thorough in that it provides for a compliance schedule of three to five years (normal for installation/operation of most pollution control equipment when retrofitted on existing large, i.e., $\leq$100 tons per year facilities). However, prior to the overall issuance of initial operating permits in 1972-73, no sequencing of permit renewals was provided, which resulted in a followup glut on the IEPA in 1976-77. Thus, while the overall structure of the State permit

system appears sound, it remains to be seen as to what true impact the program brought about with respect to stationary sources continued compliance. The IEPA has indicated that its intensive permit effort of 1971-73 was responsible for achieving 95 percent compliance by stationary sources by 1975.

Since there is little official communication between the IEPA Maywood office and CDEC other than the annual interagency agreement, some duplication of effort may result from concurrent agency compliance activities. The regional engineer sets his own priority and may or may not investigate a source which he knows CDEC is pursuing. But enforcement activity against the same source by both the IEPA and CDEC has occurred on many occasions due to communication problems.

The Maywood office's role was more effectively geared toward achieving initial compliance as opposed to continued compliance. This is evidenced by the fact that the recent IEPA reorganization has increased the Maywood office jurisdiction from 11 to 19 counties. At the same time, the number of on-board engineers has decreased from 18 in 1974 and previous years, i.e., during the peak period for construction permit applications, to 12 in 1977. (See Figures 2-6 and 2-7 in Section 2.0). An increase of two to three engineers is anticipated when the reorganization is completed. However, this increase may not offset the incremental jurisdictional increases. Since there is no program to reinspect sources at permit renewal, to insure maintenance of compliance, the reduced manpower is consistent with the apparent reduced role of the Maywood office with respect to assuring continued compliance through a highly visible regional office program. The IEPA appears to be relying more heavily on other mechanisms, i.e., threat of sanctions, complaints, etc., to assure compliance.

The impact of enforcement programs is supported by legal proceedings can result in orders against sources. However, many sources achieve compliance before legal action is completed. Since enforcement actions are lengthy, compliance during such proceedings may not be very expeditious. It has been suggested that a more streamlined enforcement procedure, i.e., not requiring IPCB action, may result in quicker compliance. The most useful aspect of enforcement is the most intangible. The fact that legal enforcement proceedings are pursued and that fines, orders and even the shutdown of a source can result is the incentive which brings sources to compliance.

Another key aspect of the IEPA approach to achieving facility compliance was the agency's "sue now - talk later" posture of 1973-74. This effort was coupled with the extensive use of district offices (including Maywood) for facility inspections. However, subsequent to the initial permit and case load, the district office manpower appears to have dwindled. The true effect and purpose of the district offices is somewhat unclear at this time, as the IEPA focuses its major resources on preparing State plan revisions.

Turning to the City of Chicago, the CDEC appears to focus its efforts on an extensive surveillance system utilizing visual inspectors as part of a comprehensive mobile fleet. These field inspectors can immediately issue "tickets" for violations. The CDEC combines this effort with a permit system which includes construction permits coupled with an annual "certification" for compliance. Field work by the CDEC appears to be more resource intensive than the IEPA. However, this is the case under the SIP and interagency agreements where the IEPA maintains a surveillance through its regional offices and relies on the CDEC for the more extensive source surveillance. In addition, the CDEC (under the interagency agreement) is to focus its enforcement/surveillance efforts on "minor" (i.e., 100 tons per year actual) sources, while the IEPA focuses its enforcement efforts on larger sources.

Coupled with its mobile inspection effort, the CDEC appears to have focused its enforcement efforts on "negotiation" with affected facilities. The agency has indicated that this approach is more effective and less costly than an enforcement effort based upon caseload. Again, it remains to be seen in subsequent phases of this project as to how effective the CDEC "negotiation" approach truly is in terms of ultimately bringing about facility compliance.

Two other patterns have emerged through the study efforts to date. These topics center upon inter/intra-agency communications and overall resources devoted to compliance efforts. With respect to communications, it appears as though communications have been severely strained at times in the past, between the IEPA Springfield office and the various district offices, as well as between the CDEC and the IEPA. In the former case, the apparent lack of communications between the IEPA headquarters and Maywood office during 1973-76 may have resulted in somewhat clouded role for the district office in terms of program responsibilities and/or resource levels. This, in turn, may have affected the IEPA's ability to draw the maximum benefit from its existing permit program.

In the latter case involving communications problems between the IEPA and the CDEC in the past have resulted in instances where both agencies were taking simultaneous actions against the same facility, with both agencies potentially not recognizing the enforcement/compliance activities of the other. Again, during the next phase of the project, we will examine such facilities in order to attempt to determine which actions (if any) had the greatest impact at the facility level, when applied at the same time.

In terms of resources, it appears that both agencies (while continuing to grow through 1975-76) have maintained rather extensive resource commitments towards achieving facility compliance. For both

agencies at least 30 percent of their overall resources have been devoted to this area. During the following phases of this study, we will attempt to focus upon whether or not this seemingly extensive resource commitment has achieved the desired results.

Overall, as indicated in the previous discussions, certain trends have emerged regarding the enforcement concepts and practices of the two agencies studied. While it is obvious that both agencies are sincerely dedicated towards achieving and maintaining stationary source compliance, an extensive study of specific facility actions during the past six to seven years will be required during Phase II in order to attempt to isolate the most cost-effective agency mechanisms.